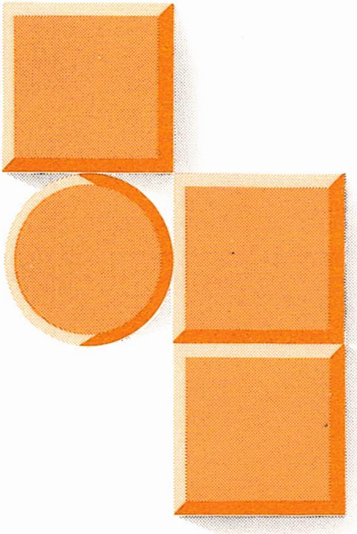
THE ERICSSON PC



ERICSSON PORTABLE PC

USER'S MANUAL

ERICSSON

Information to the User

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If interference should occur in a particular installation, it can be dealt with as follows:

- Turn your equipment on and off, to determine if it is your equipment causing the interference.
- Reorient the radio or television antenna.
- Move the equipment away from the antenna or the receiver.
- Plug the equipment into a different circuit than the receiver.

If necessary, consult your service representative or an experienced radio/TV technician for additional suggestions.

> Note that exportation of this equipment is subject to the procurement of any necessary license required by competent authorities.

Second Edition (June 1985)

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Preface

Congratulations on your choice of a *personal computer (PC)*. The ***Ericsson Portable PC*** combines user-friendly design with great software flexibility, making it a doorway to productive, enjoyable computing for almost any computer application.

This book, the ***User's Manual***, is your key to opening this door. As a new PC owner, you will want to read it carefully. It answers all your questions, and shows how easy it is to make your ***Ericsson Portable PC*** work for you. For daily operation, you can use the ***Reference Card***, a highly compact version of the ***Operation*** chapter.

The first chapter, ***Getting Started***, contains information on how to set up your PC, and how to get started using it. It also contains information on how to install an extra diskette drive, how to set the built-in clock, and how to copy the original DOS diskette.

The next chapter, ***For First-Time PC Users***, provides an overview of the ***Ericsson Portable PC*** system, including hardware and software. It also defines some of the terminology that you encounter when you use the *Disk Operating System (DOS)*.

The third chapter, ***Operation***, describes DOS in more detail. It describes several of the DOS commands, as well as how to make good use of the *special key functions* that exist in DOS. There are sections also that describe how to use your optional built-in ***Ergo-Disk***, how to use the optional built-in printer, and how to load the programming language BASIC, which comes on your DOS diskette.

If you encounter difficulties or have questions while working with your ***Ericsson Portable PC***, refer to the fourth chapter, ***Help***. It gives you information quickly so that you can handle minor problems efficiently on your own.

You may store the operating instructions for optional equipment in the ***Options*** chapter.

The ***Appendices*** contain useful information ranging from national keyboard layouts and character set codes to system specifications.

You can find information quickly in this book by referring to the combined ***Glossary/Index***.

Format Notes

This manual includes the following features:

- Text to be typed by you, *the user*, is highlighted with color and a different typeface, as in this example:

  Type in `dir *.*`

- Instructions telling you to press a certain key on the keyboard appear in a different typeface, as in this example:

  Press **Caps Lock**

- Messages displayed on the screen are highlighted using color, a different typeface, and a frame, as in this example:

```
This is an example of screen text.
```

Terms Used

Throughout this manual, the following terms and definitions are used:

- *DOS diskette*, which refers to your working copy of the original ***DOS Diskette***.
- *Diskette*, which refers only to flexible disks and flexible disk drives.
- ***Ergo-Disk***, which refers to the optional built-in memory expansion which you can use to simulate an extra diskette drive.

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Getting Started

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Using Your PC

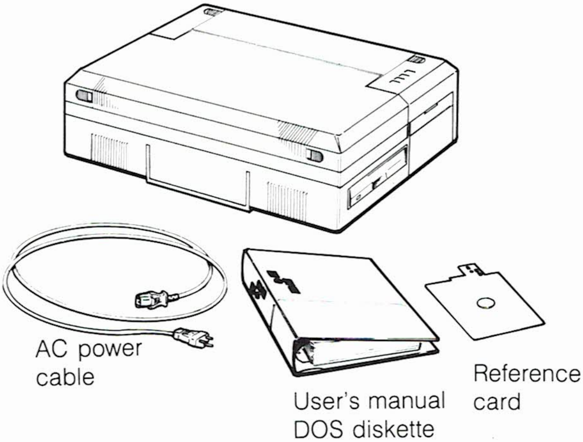
This section contains information on how to get started with your ***Ericsson Portable PC***. In addition, information is given on how to copy the DOS diskette, how to enter time and date, and how to prepare the PC for transport.

We hope that you find the time you spend with your ***Ericsson Portable PC*** both enjoyable and satisfying.

Unpacking

Open the shipping carton and remove all packing materials from your ***Ericsson Portable PC***. If you ordered a standard system, you should have:

- System unit
- AC power cable
- ***User's Manual***, which includes the DOS diskette.
- ***Reference Card***

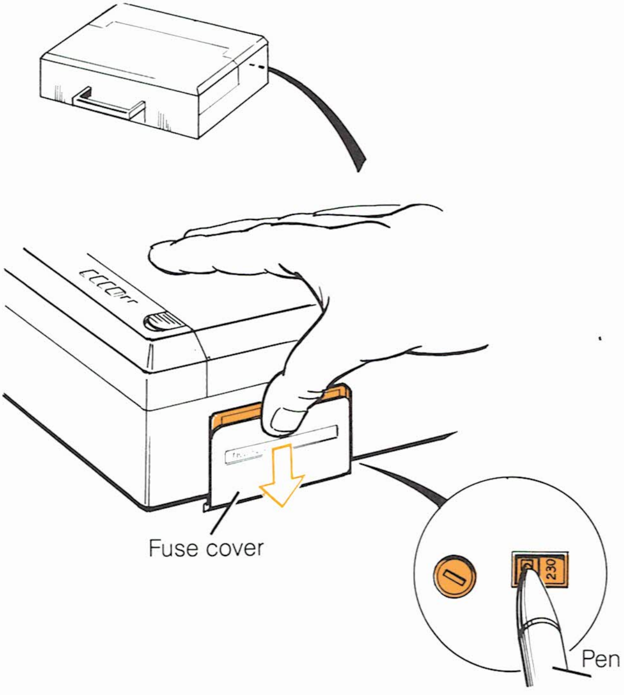


Note: *Always handle your* ***Ericsson Portable PC*** *with care.*

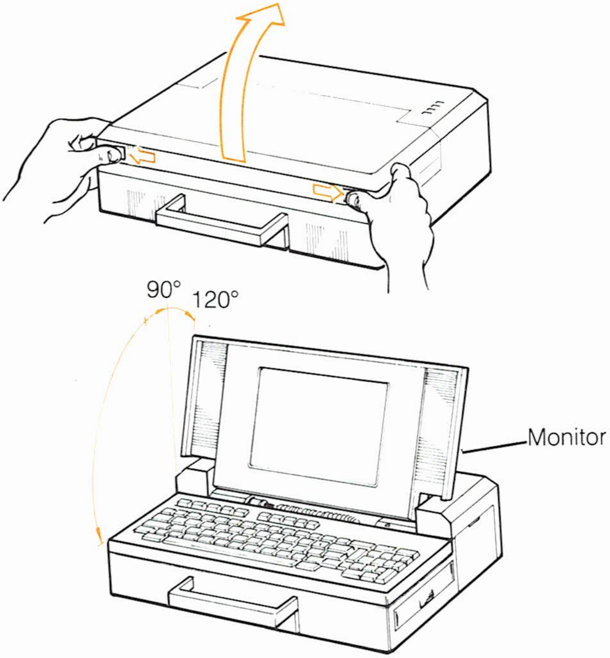
Setting Up

These simple procedures will get you started operating your PC correctly. Follow them carefully; they describe the proper way to set up and handle your PC.

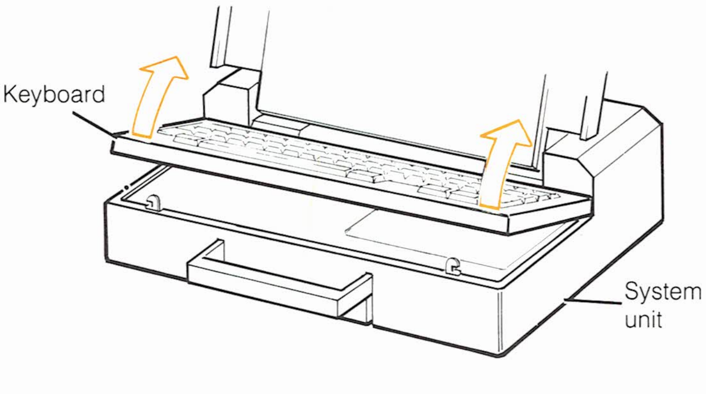
1. Set the PC down gently with the carrying handle facing you. Close the handle.
2. Open the fuse cover on the back of the PC and check to be sure that the voltage selector switch is set correctly.



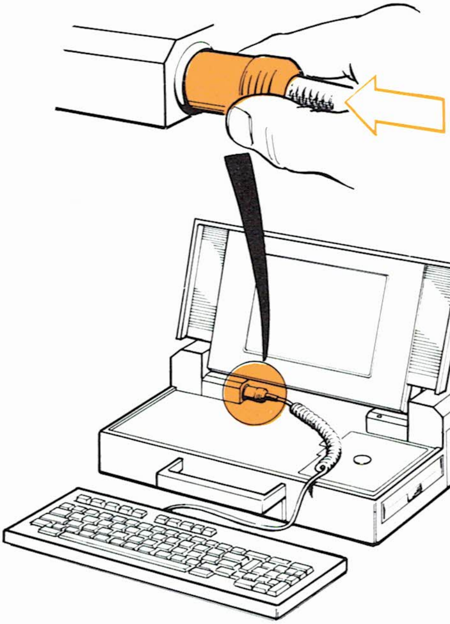
3. Slide the release buttons outward and swing the monitor up to a suitable angle (90–120°).


90°
120°
Monitor

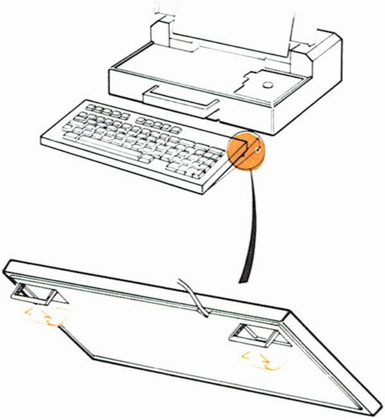
4. Lift the front end of the keyboard to release it from the system unit and place it in front of the system unit. If you prefer, the keyboard can remain on the system unit when you use it.


Keyboard
System unit

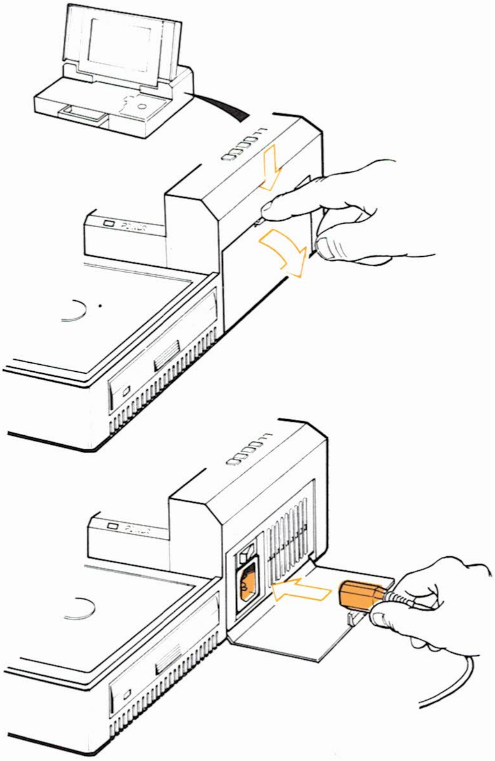
5. Check that the keyboard cable is properly connected to the system unit.



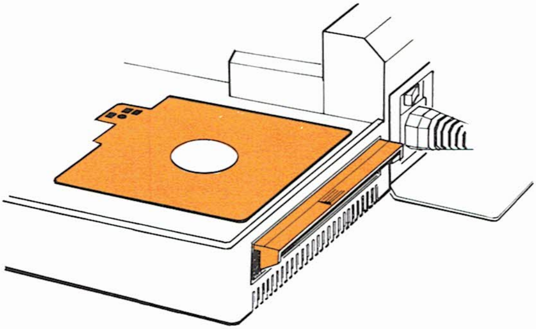
6. Position your keyboard at a comfortable angle. The keyboard can be tilted in either of two positions.



7. Open the power switch door, connect the power cable to the PC and then to the wall outlet.



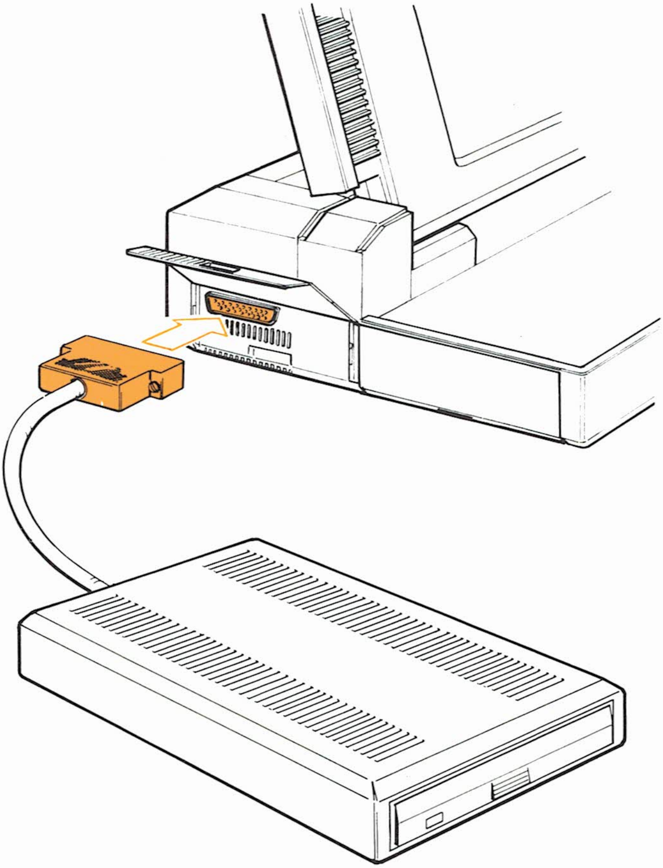
8. Open the diskette drive door by pushing the lower edge slightly then releasing it. Remove the protective cardboard from the diskette drive. Then remove the ***Reference Card*** from the plastic pocket in the ***User's Manual*** and place it on the system unit. Use the ***Reference Card*** in place of the protective cardboard when you transport the PC.



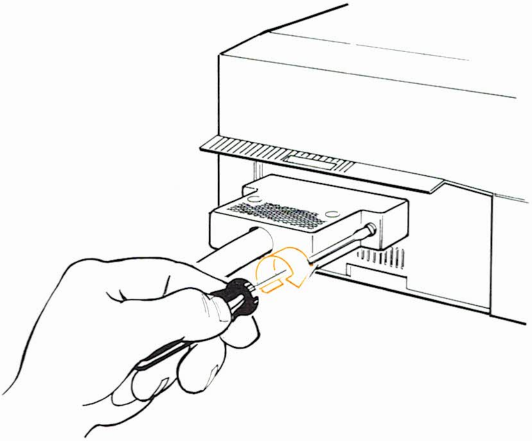
Installing an Extra Diskette Drive

The ***Ericsson Portable PC*** has an external diskette drive available as an option. This drive comes with a cable and connector, which makes it very easy to connect the diskette drive to the PC.

1. Be sure that the computer is turned off.
2. Plug the diskette drive in on the left-hand side of the PC. The plug is polar; you may have to turn it over.



3. Screw the screws on both sides of the plug into their threaded holes on the computer.

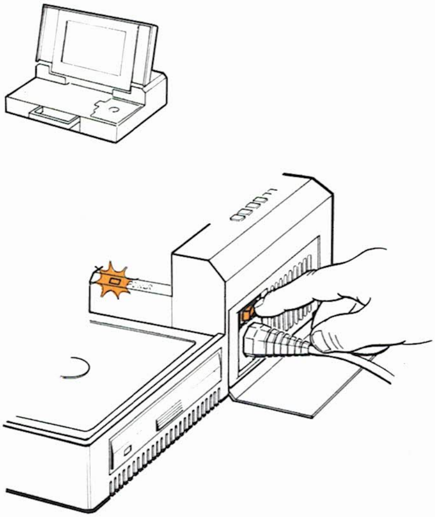


4. Remove the protective cardboard from the diskette drive.

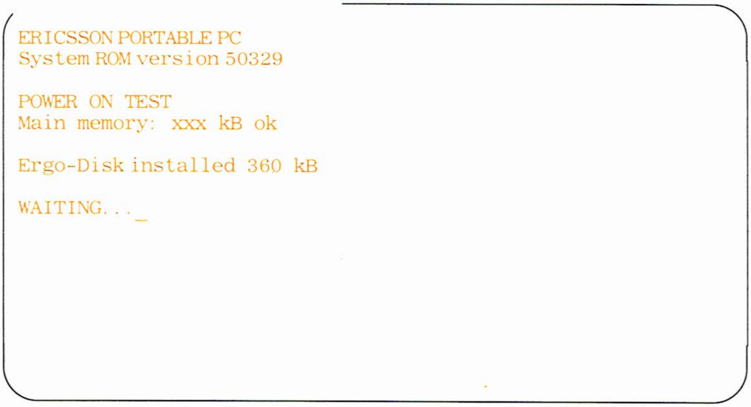
Note: *When you transport the extra diskette drive, be sure that the protective cardboard is in place.*

Powering-On

1. Turn the PC on by pressing the power switch. The power-on indicator will light.



The PC runs its *power-on test*, which takes about half a minute. If the power-on test is OK, you hear a beep, the read/write indicator is lit, and the following message is displayed:



```
ERICSSON PORTABLE PC
System ROM version 50329

POWER ON TEST
Main memory: xxx kB ok

Ergo-Disk installed 360 kB

WAITING..._
```

The texts for `Extra memory` and `Ergo-Disk` are displayed only if your PC is equipped with these options.

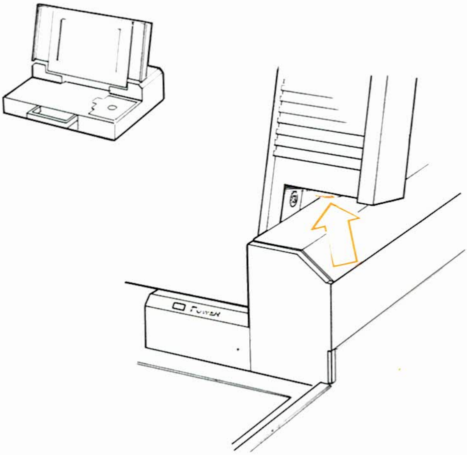
The letters xxx in the example stand for the amount of memory installed in the PC. If your PC is a standard system, xxx is equal to 256. For a memory larger than 256 kB, the power-on test may take about half a minute.

If you turn your PC on more than once per day, you can save time and bypass the memory test. After you power-on, press the **ESC** key until you here a beep; then release it.

If there are additional units attached to your PC, turn them on before you turn the PC on. Refer to the operating instructions for that equipment for specific startup procedures.

If you swing the monitor down to an angle less than 80°, the screen automatically turns itself off to prevent overheating. When you swing the monitor up again, the screen automatically switches on again, displaying the same information as you had before the screen was turned off.

To adjust the screen brightness, turn the knob under the right-hand edge of the monitor.

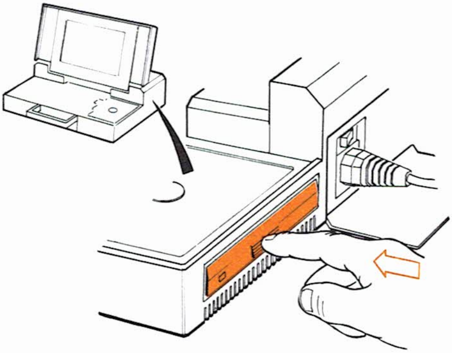


Inserting Diskettes

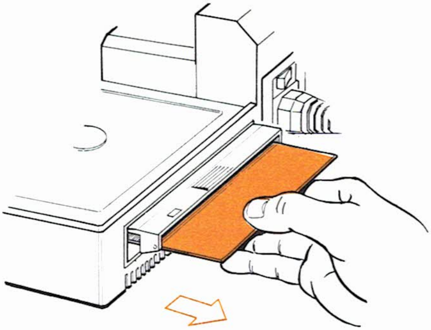
Note: *A diskette is very sensitive and must be treated with care. You can read more about diskette handling in the chapter entitled **For First-Time PC Users**.*

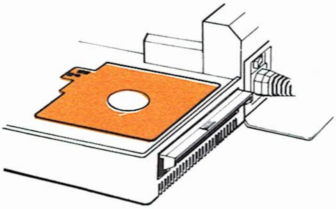
Be careful when inserting a diskette in the diskette drive. If you insert it correctly, it slides in easily. Never force it into place.

1. Open the diskette drive door by pushing the lower edge slightly then releasing it.

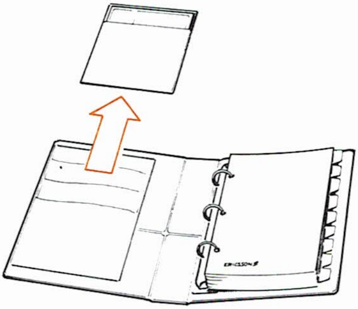


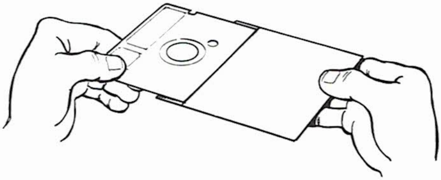
2. If the ***Reference Card*** (or protective cardboard) is still in the diskette drive, remove it and place it on the system unit.



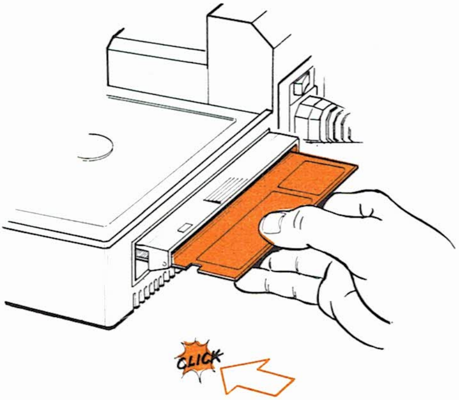


3. Remove the original DOS diskette from the plastic pocket in the ***User's Manual,*** then remove it from its envelope.

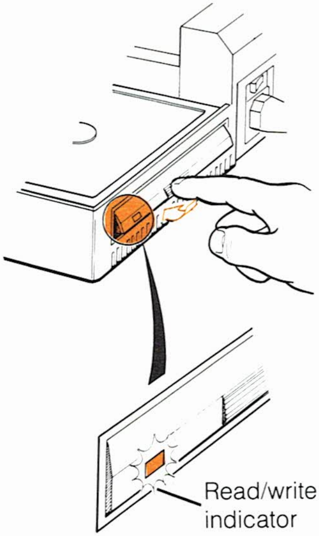




4. Insert the diskette into the drive. Press the diskette until it locks. The diskette must be turned so that the label points upwards.



5. Close the door.



Note: *If you have inserted the diskette but then change your mind and want to change diskettes, don't try to pull the diskette you inserted out; it is locked in place. Close the door and wait until the read/write indicator goes off. Open the door again (by pressing then releasing the lower edge) and then pull out the diskette.*

Setting Date and Time

When the DOS diskette is inserted and the door closed, your PC automatically loads the *disk operating system (DOS)*. If this is the first time that you are using your PC, you must use the original DOS diskette that is provided in the ***User's Manual***.

DOS keeps track of the time and date when files are created and changed. Your ***Ericsson Portable PC*** has a real-time clock with battery backup. The first time you operate the PC, using the original DOS diskette, you have to enter time and date.

In this example, the format for entering the date follows the American custom (month - day - year). You can find information on how to enter the date in other national ways in ***Appendix B. Date and Time Entry Formats***.

Type in the current date.

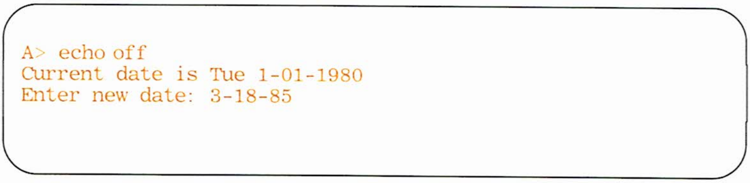
For the date March 18, 1985, for example, enter the month as 3 or 03, the day as 18, and the year as 85 or 1985. You can use either hyphens (–) or slashes (/) to separate the numbers.

1. Type in the date in the following format:

   `3-18-85`

2. Press the ↵ key.

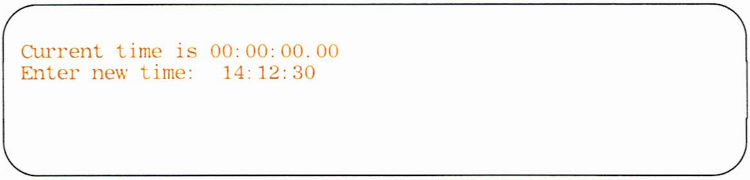
When you have entered the date correctly, your screen should look like this:



```
A> echo off
Current date is Tue 1-01-1980
Enter new date: 3-18-85
```

The format for entering the time is hours:minutes:seconds. Enter the time as for a 24-hour clock, and use a colon (:) to separate the numbers. When you press the ↵ key, tenths and hundredths of a second are set to zero.

When you have entered the time correctly, your screen should look like this:

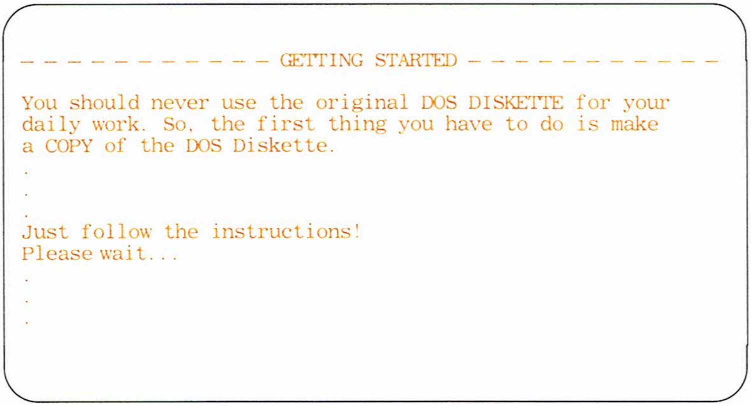


```
Current time is 00:00:00.00
Enter new time:  14:12:30
```

Press the ↵ key.

Making a Copy of the DOS Diskette

You should not use the original DOS diskette for your everyday work, so you must make a copy of this diskette. Follow the instructions that appear on the screen.

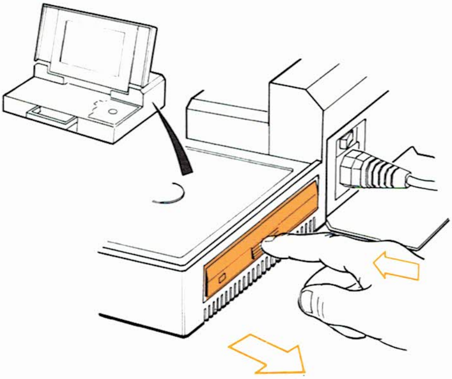


```
- - - - - - - - - - - GETTING STARTED - - - - - - - - - - -

You should never use the original DOS DISKETTE for your
daily work. So, the first thing you have to do is make
a COPY of the DOS Diskette.
.
.
.
Just follow the instructions!
Please wait...
.
.
.
```

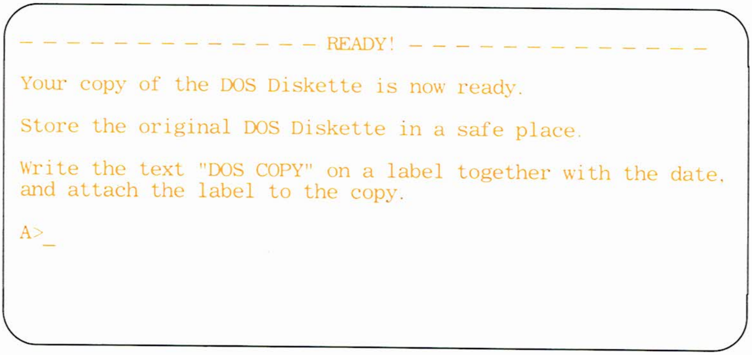
When you are told to remove a diskette, do as follows:

1. Open the diskette drive door by pushing the lower edge slightly then releasing it.
2. Remove the diskette.



Note: *If you have a one-drive system without an* ***Ergo-Disk****, you must insert and remove the diskettes several times.*

When the copy is ready, the screen looks like this.



```
- - - - - - - - - - - - - - READY! - - - - - - - - - - - - - -

Your copy of the DOS Diskette is now ready.

Store the original DOS Diskette in a safe place.

Write the text "DOS COPY" on a label together with the date,
and attach the label to the copy.

A>_
```

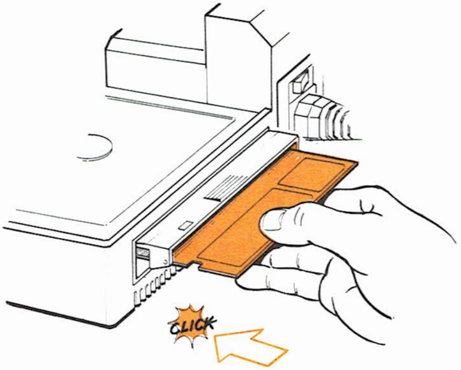
Be sure to label the copy of the DOS diskette. Use a soft-tipped pen if the label is already on the diskette.

Always use the DOS copy when you work with your PC; never use the original diskette. Store the original DOS diskette in a safe place.

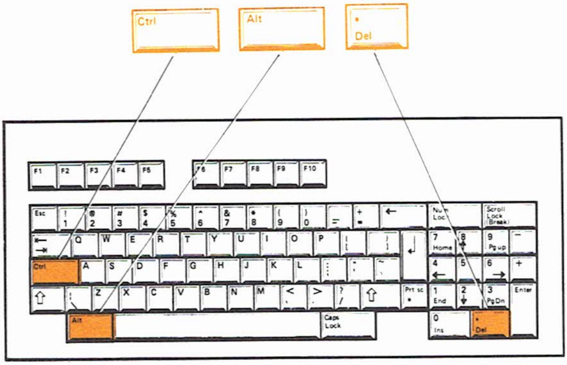
Be sure that you use ***Ericsson PC DOS*** Version 2.11C (or a later version), which is delivered with your PC.

Restarting DOS

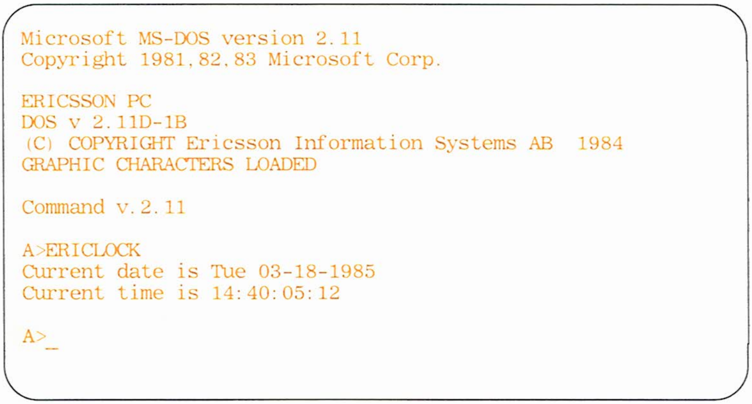
1. Insert the DOS copy diskette in the drive.



2. Press the **Ctrl** and **Alt** keys and hold them. Then press the **Del** key.



The diskette drive starts to run, which tells you that DOS is loading. After approximately ten seconds, the following message should appear on your screen:



```
Microsoft MS-DOS version 2.11
Copyright 1981,82,83 Microsoft Corp.

ERICSSON PC
DOS v 2.11D-1B
(C) COPYRIGHT Ericsson Information Systems AB  1984
GRAPHIC CHARACTERS LOADED

Command v.2.11

A>ERICLOCK
Current date is Tue 03-18-1985
Current time is 14:40:05:12

A>_
```

The system prompt (A>) is displayed, followed by the cursor (_). The letter in the prompt indicates which drive the PC considers to be the *default drive*. This is the drive that the PC works with if you don't specify a drive.

When the prompt appears, the computer is ready and waiting for input from you. At this point, you can start an application program, like word processing, or you can work with DOS. Starting an application program is described in the manual supplied with that program; DOS is explained in the chapter entitled ***Operation***.

Environment

The ***Ericsson Portable PC*** requires that a little care be taken about the area in which you use it. Generally, the PC functions well in an environment in which you are comfortable. Keep it

- Away from extreme temperatures
- Out of direct sunlight
- Away from humidity and liquids
- Away from dust

Powering-Off

When you have finished working with your PC, follow the instructions below to turn it off safely.

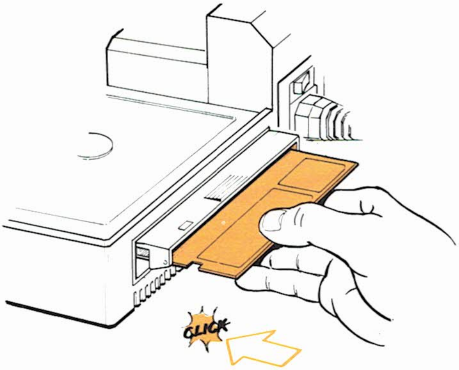
Never turn your PC on or off when a diskette is present in the diskette drive.

1. Make sure that you end your application program according to the procedure described in the application program manual.
2. Remove your diskette from the drive.
3. Turn your PC off by pressing the power switch.

If your PC includes any additional units, turn these off now. Refer to the operating instructions for that equipment for the correct procedures.

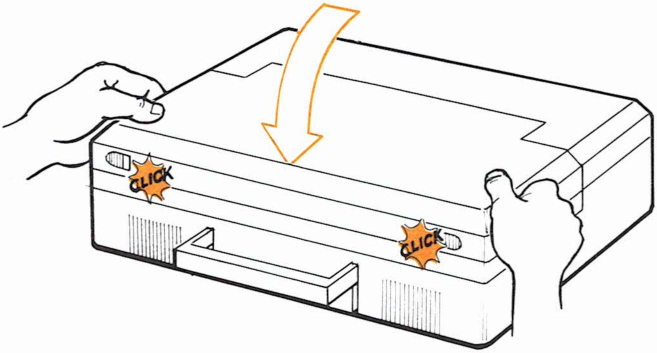
Getting Ready for Transport

1. Insert the ***Reference Card*** in the diskette drive.

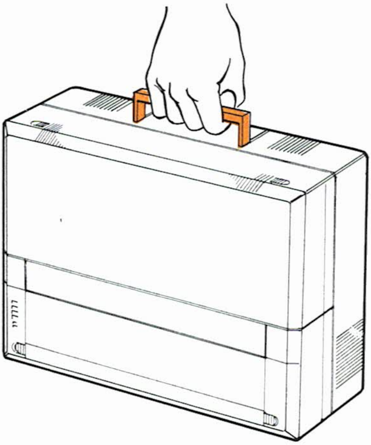


2. If you have connected an extra diskette drive, remove it from the system. Make sure that the *protective cardboard* is in place.
3. Replace the keyboard on the system unit.
4. Remove the power cable from the wall outlet and from the PC. Coil up the cable.
5. Close any covers that may be open. These include
   - The cover to the power switch
   - The cover to the parallel/serial ports
   - The cover to the optional diskette drive connector.

6. Close the monitor by moving it gently down until you hear a click.



7. Swing the handle out. Always carry the PC by the handle.



Note: *Handle your* ***Ericsson Portable PC*** *carefully. It is sturdy, but it may break if you drop it,*

Always use the original box and packing material when shipping your PC. Otherwise, the hardware guarantee may not be valid.

For First-Time PC Users

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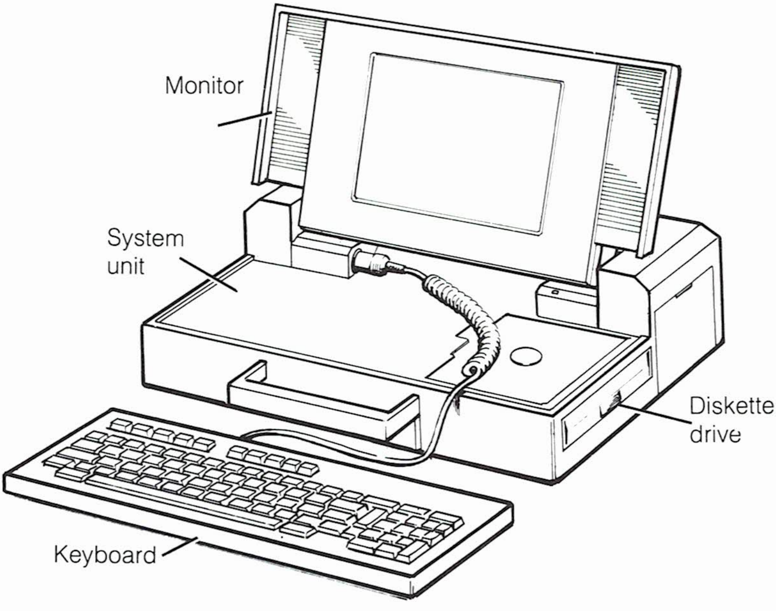
PC Overview

This chapter is intended for you if you are the first-time user of a *personal computer (PC)*. It provides you with general information about computer equipment and what it can do, and it also defines some of the terms used with computers.

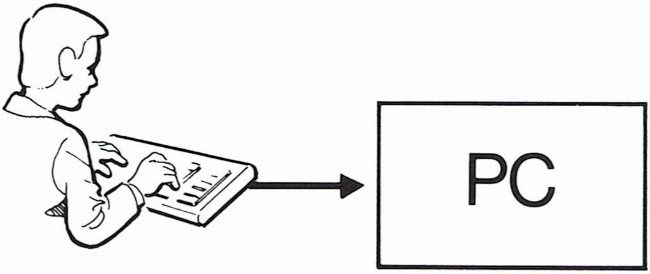
There are no specific instructions in this chapter on how to operate the ***Ericsson Portable PC***. These are included in the chapter entitled ***Operation***.

If you are already an experienced PC user, we recommend that you take a moment to look this chapter over before moving ahead to the next chapter. There are sections included here that even an experienced user can benefit from reading, such as ***About Available Hardware*** and ***About Available Software***.

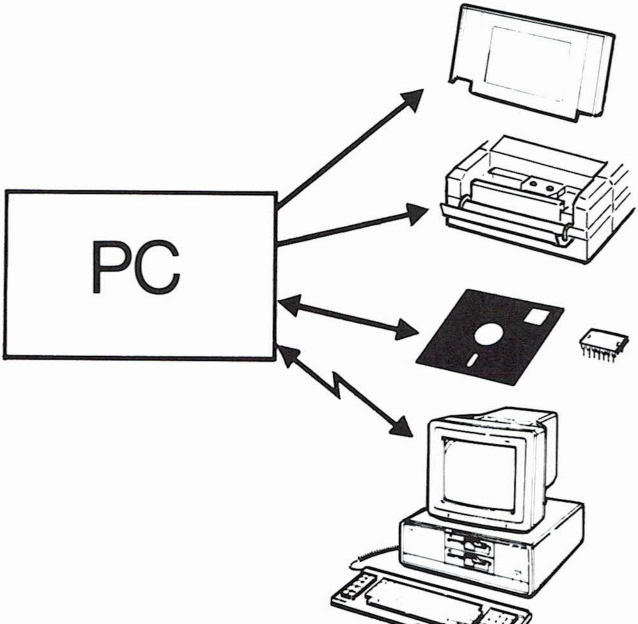
Several units with different functions combine to make up the ***Ericsson Portable PC***.



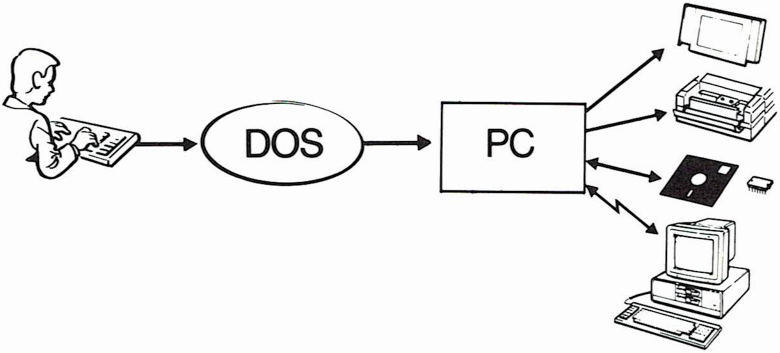
The *keyboard* enters information into the PC. It is the means by which you communicate with and control your PC. Everything that you type at the keyboard enters the PC.



Responses and results from the PC are displayed on the *monitor,* printed on the *optional printer,* stored in the PC *memory* or on *diskettes*, or communicated to another computer.



All of this is made possible by a special set of computer programs called the *disk operating system (DOS)* and the *system unit*, which together control displaying, printing, storing, and communicating.



The parts of your PC that you can touch are called the *hardware*. DOS and all other programs, such as word processing, investment analysis, data communication, and many others are called *software*.

Hardware

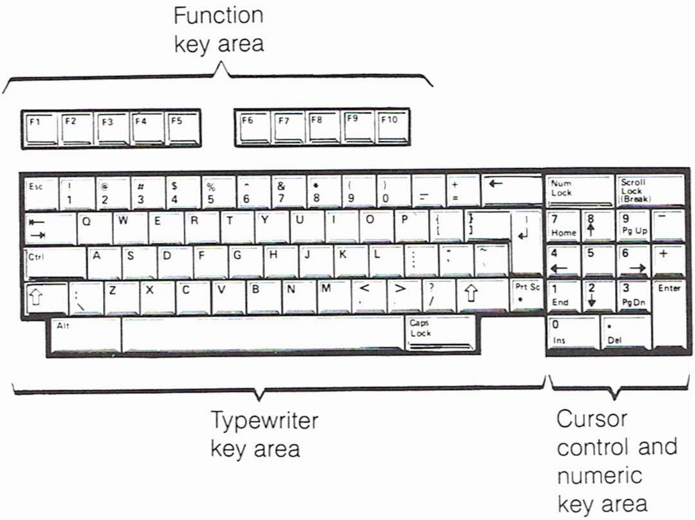
Before you can begin to use your PC effectively, you must first become familiar with the hardware. The logical place for you to start getting acquainted is the *keyboard*.

Keyboard

There are many similarities between the PC keyboard and an ordinary typewriter keyboard. So, if you have used a typewriter, you should feel comfortable using your PC.

The keyboard is designed with three separate key areas to make it easier for you to use:

- Function key area
- Typewriter key area
- Cursor control and numeric key area

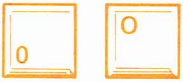

Function key area
F1 F2 F3 F4 F5 F6 F7 F8 F9 F10
Esc ! 1 @ 2 # 3 $ 4 % 5 ^ 6 & 7 * 8 (9) 0 _ - + = ←
Q W E R T Y U I O P { [}]
Ctrl A S D F G H J K L : ; " ' ~ `
⇧ | \ Z X C V B N M < , > . ? / ⇧ Prt Sc *
Alt Caps Lock
Num Lock Scroll Lock (Break)
7 Home 8 ↑ 9 Pg Up -
4 ← 5 6 → +
1 End 2 ↓ 3 PgDn Enter
0 Ins . Del
Typewriter key area
Cursor control and numeric key area

Keyboard layouts differ from country to country; the one shown here is the American version. You can find examples of other layouts in ***Appendix A. Keyboard Layouts***.

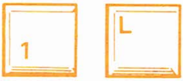
Some of the keys on your PC keyboard perform special functions when used with DOS. These functions are described in detail in the chapter entitled ***Operation***. However, these same keys may have different functions as you move from DOS to an application program; they also vary from one application program to another. The manual supplied along with the individual application programs will contain all the information you need.

Be Precise

The PC is very fussy about your choice of keys. Be sure to be precise with the following characters, to avoid confusion:



The number **0** and the letter **O**.



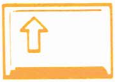
The number **1** and the lower case letter **l**.

You must also be cautious with the **Space** key.

To the PC, all characters are equally important – even a simple space. Therefore, if you leave out a space in a command, the PC may not understand the command.

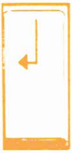
How Some of the Keys Work

Though most of the keys are self-explanatory, some require explanation:

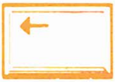


The ⇧ (shift) key works just like the same key on a common typewriter. Pressing this key along with any alphabetic key causes the letter to be displayed in upper case. Pressing it in conjunction with any other key causes the character shown on the upper left portion of the key to be displayed. There are ⇧ keys on both sides of the typewriter area.

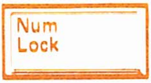
The **Caps Lock** key locks the alphabetic characters in upper case mode. To type lower case letters while in this mode, press the ⇧ key along with the desired letter key. When you press the **Caps Lock** key a second time, the keyboard returns to lower case mode.



The ↵ (enter) key is used to enter a command. This key has the same function as the **Enter** key in the numeric key area.



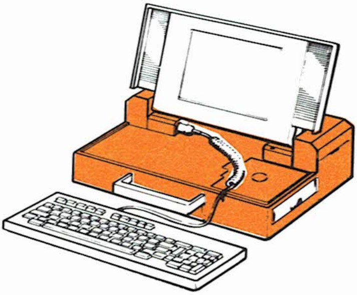
The ← (backspace) key moves the cursor one position to the left. If a character is displayed immediately to the left of the cursor position, it is erased.



The **Num Lock** (numeric lock) key locks keys **0** through **9** and **.** (decimal point) in numeric mode. When you press the **Num Lock** key a second time, keys **0** to **9** and **.** return to their cursor control functions.

System Unit

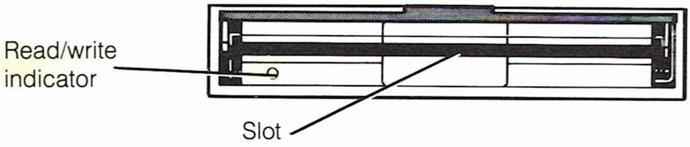
Whenever you use your PC, the *system unit* is a part of the action.



The system unit gets its instructions from *programs*. Programs are stored on diskettes and copied into the PC memory when they are needed.

Diskette Drives

The *diskette drives* read information from, and write information on, the diskettes. Your PC has one built-in diskette drive and an optional drive as a separate unit. The diskette drive has a *slot* for inserting a diskette and a *door* to lock the drive.



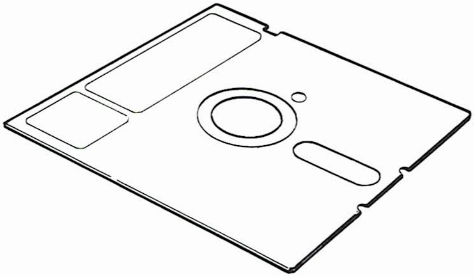
***Note:** When transporting the PC, a **Reference Card** should always be inserted in the diskette drive.*

Each diskette drive has a *read/write indicator*. The read/write indicator is the red light on the diskette drive door. When this light is on, the diskette drive is running.

Be sure that you never open the door or turn off the PC when the read/write indicator is on and a diskette is in place. If you do, information on the diskette may be lost.

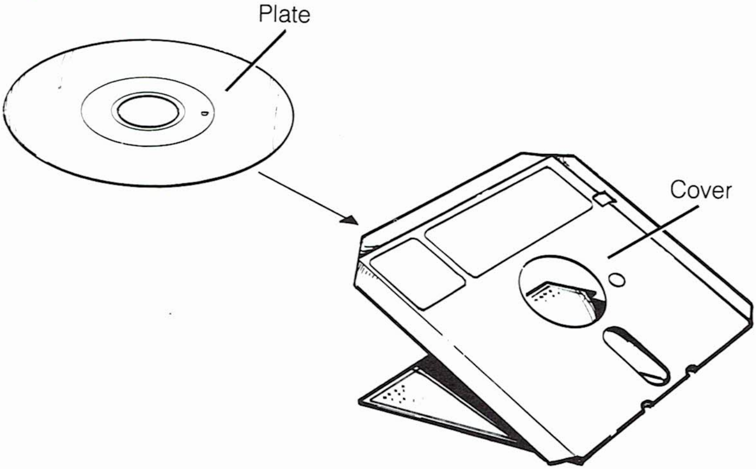
Diskettes

The information storage medium used in a diskette drive is called a *diskette*. Each diskette can store about *360,000 bytes* (360 kB), and each byte holds one character.



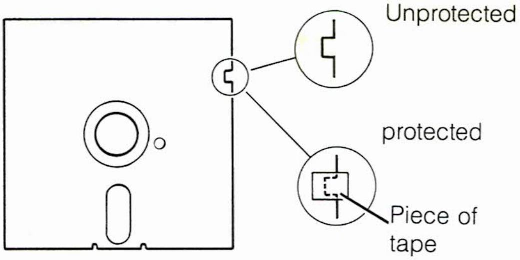
It is very important to *backup* the diskette. That is, you should keep an updated copy of the information on the diskette you are using on another diskette. A diskette can become dirty, worn out, or damaged, and important information can be accidentally erased. When these things happen, backup copies of your information will save you many hours of work. How to make copies is described in the chapter entitled ***Operation***.

A diskette is sometimes referred to as a *floppy disk* or a *flexible disk*. It is a flexible, flat, circular plate permanently housed in a black plastic cover.



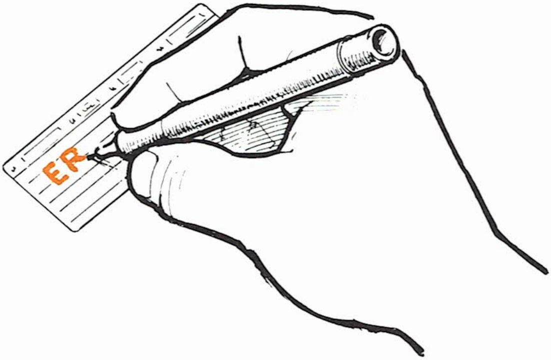
The plate has a magnetic coating, like ordinary tape for a tape recorder. It stores data and programs in the same way that a tape recorder records music. To enable it to store your data or programs, however, you must first *format* the diskette. The formatting procedure is described in the chapter entitled ***Operation***.

Each diskette has a *write-protect notch*. By placing a piece of foil tape over this notch, you make it impossible for the PC to write on the diskette.

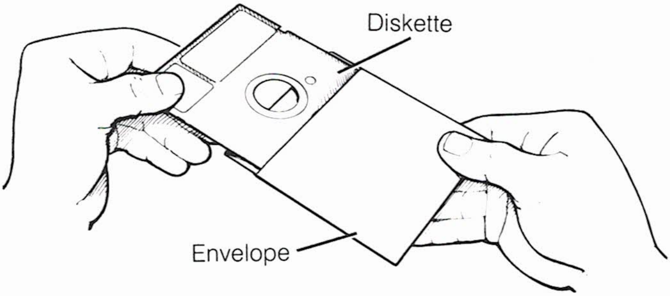


This protects the stored information from accidental alteration or erasure. When you remove the tape, the PC is again able to write on the diskette. Get into the habit of write-protecting any diskettes containing important information. You will save yourself a lot of work if information somehow gets lost.

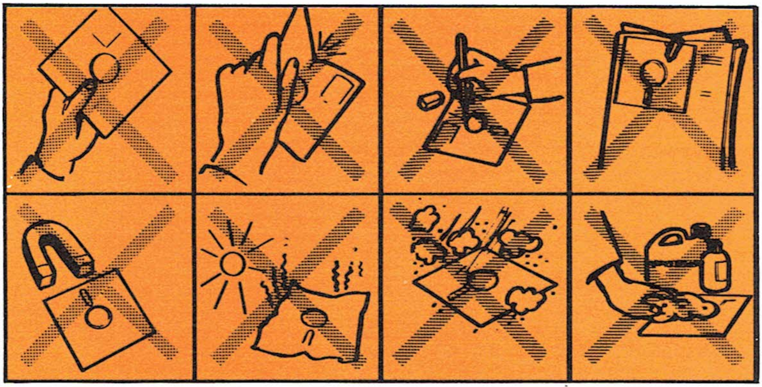
Label your diskettes properly. Remember never to write the label with anything other than a felt-tip pen when the label is attached to the diskette.



Because of its flexibility and its coating, a diskette is very sensitive and must be treated with great care. Dust and dirt can be very damaging, so always store your diskettes in their protective *envelopes*.



The following illustration points out some things you should never do when handling your diskettes.

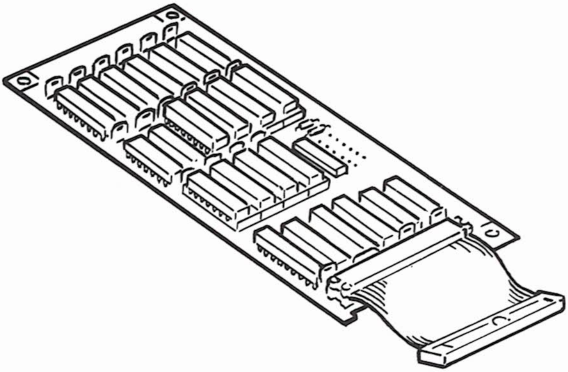


In ***Appendix C. Diskette Recommendations***, you will find information about the kind of diskettes you should use to get the most out of your PC.

Ergo-Disk

A RAM disk is not a normal rotating disk drive. To use it, you need no diskettes. The device simulates a disk drive in an expanded part of the memory of your PC. It enables considerably faster storage and retrieval of data and programs than that of normal diskette and hard disk drives. You can use this disk almost in the same way as you use a diskette drive. The only differences are loading data or programs into the RAM disk at the start of your session, and saving changed information on the diskette drive before powering-off.

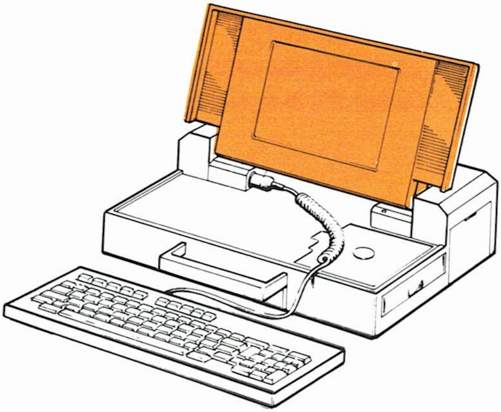
The transferring of data and application programs to and from the RAM disk are supported by special commands and routines. This gives you access to a powerful tool, the ***Ergo-Disk***. How to handle this device is discussed in the chapter entitled ***Operation***.



Monitor

The system uses the *monitor* to communicate with you. The monitor has a very thin *plasma screen* that has been specially designed for the ***Ericsson Portable PC***. The PC prints almost everything that you have typed on your keyboard onto the screen, indicating that the information has been received. Most computation results are also displayed on the screen.

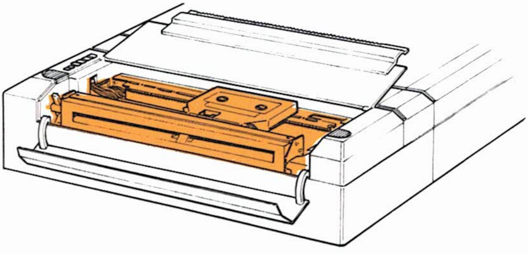
The plasma screen has a resolution of 640 x 400 dots. It presents a much sharper image than that on the standard cathode ray tube (CRT) screen, making it much easier to look at and to read.



Printer

The PC can also present results and communicate with you through a *printer*. The optional built-in printer is very convenient when you want a copy of your work on paper. You can print either information that is stored on a diskette, or that is displayed on the screen.

The optional built-in printer for your PC is a *matrix type thermal printer*. It prints on heat-sensitive (thermal) paper, or, together with a heat-sensitive ribbon, on plain paper. You can use the printer for either of two character sets or for graphics printing. The printing speed is 40 characters per second.



If you want a high-speed printer or letter-quality printing, use an external printer together with your ***Ericsson Portable PC***.

You can use almost any available printer with your ***Ericsson Portable PC;*** a number of different printers are available from ***Ericsson***.

Software

This section explains some of the terms used in relation to software. The word *software* refers to all types of programs. But, just what is a program?

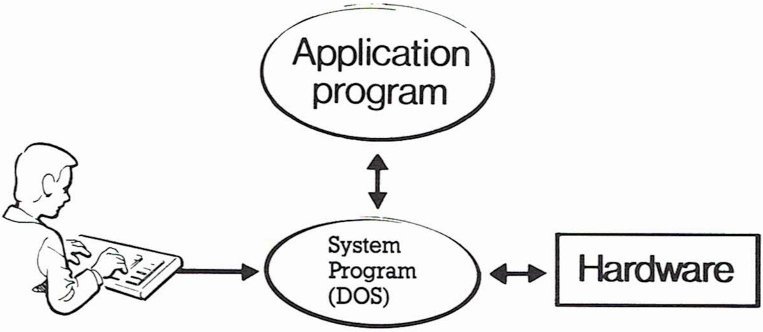
Program

A program is a set of instructions that tells the PC what to do. There are basically two types of programs: *system* programs, and *application* programs.

Your PC needs a system program in order to operate. It uses the system program to control the various pieces of system hardware and make them work together.

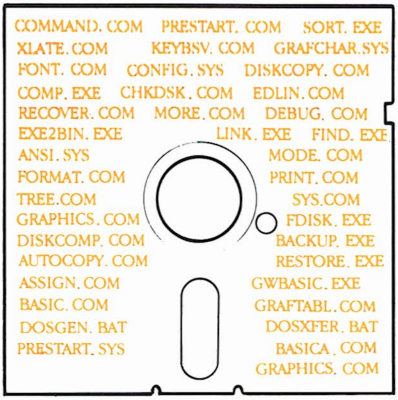
An application program is a very specialized group of instructions designed to fit the needs of a particular type of work, like word processing. Application programs use the system program in order to operate the diskette drives, the monitor, the printer, and so on.

The following diagram illustrates the relationship between software, hardware, and user.



Disk Operating System

A sophisticated small computer like the ***Ericsson Portable PC*** uses a group of programs called a *disk operating system (DOS)* to make the various units of the PC hardware work together.


COMMAND. COM
PRESTART. COM
SORT. EXE
XLATE. COM
KEYBSV. COM
GRAFCHAR.SYS
FONT. COM
CONFIG. SYS
DISKCOPY. COM
COMP. EXE
CHKDSK. COM
EDLIN. COM
RECOVER. COM
MORE. COM
DEBUG. COM
EXE2BIN. EXE
LINK. EXE
FIND. EXE
ANSI. SYS
MODE. COM
FORMAT. COM
PRINT. COM
TREE.COM
SYS.COM
GRAPHICS. COM
FDISK. EXE
DISKCOMP. COM
BACKUP. EXE
AUTOCOPY. COM
RESTORE. EXE
ASSIGN. COM
GWBASIC. EXE
BASIC. COM
GRAFTABL. COM
DOSGEN. BAT
DOSXFER. BAT
PRESTART. SYS
BASICA . COM
GRAPHICS. COM

There are two parts of DOS. One part is the *input and output system*, which controls the flow of information within the PC. The other part is a group of programs that mainly manipulate information.

The input and output system controls the movement of information between the keyboard, monitor, system unit, printer, and any other units that may be connected to the PC system. This part of DOS must be loaded in the PC, otherwise the PC does not work.

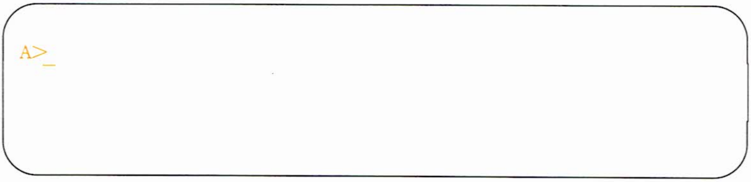
The second part of DOS, containing separate programs like DISKCOPY.COM and FORMAT.COM, is only active when you want to manipulate information stored on a diskette. These programs must be loaded only when they are being used.

You activate these programs for manipulating information by entering *commands*.

Commands

Commands let you communicate with DOS and control the PC; they make it your servant. The PC is a very obedient servant when you know how to tell it what to do. Some of the commands you will use most often are explained in detail in the chapter entitled ***Operation***.

You can never give the PC a command until its *system prompt* (for example: A>) and its blinking *cursor* (_) appear on the screen. These indicate that the PC is ready to receive a command.



```
A>_
```

There are some fifty DOS commands available. They are divided into two groups:

- Internal commands
- External commands

The *internal* commands activate programs that are present whenever DOS is loaded. These commands can be entered whenever the system prompt is displayed, even if the DOS diskette is not in the drive.

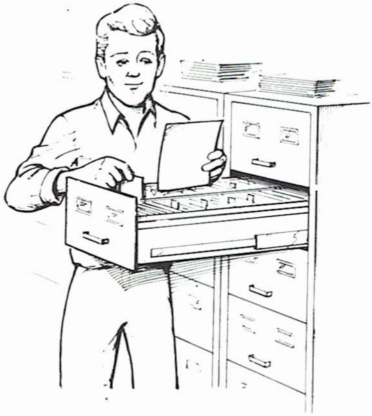
The *external* commands, some of them called utilities, use programs stored on the diskette. They have to be loaded into the memory each time you want to use them. The system prompt must be displayed and the DOS diskette must be in the drive before you enter an external command.

The utility commands work differently from the other external commands. They do not execute automatically after they have been entered. Instead, control of the execution of these programs is passed on to the user.

Even though the DOS command list is long, you normally don't need more than about ten of these commands. The chapter entitled ***Operation*** explains what these commands do and how to use them. With them, DOS can list filenames, copy files, rename files, erase files, and so on.

Files

A *file* is an individual collection of information stored on a diskette. Each file has a unique *filename*. A file is comparable to a folder in a filing cabinet. To find specific information in the cabinet, you have to look for a folder with a specific name.



You have to do the same thing when you want access to information stored on a diskette. That is, you must give the PC the correct filename to get to the information you want.

Not all files contain accessible information. Some contain system programs or application programs that give the PC instructions. The information in these files is useful only to the PC.

Directory

The PC keeps a list on each diskette of all the files that have been stored there. This list is called a *directory*. In addition to filenames, the directory contains information about the size of each file and when you last updated it.

To see the directory of the diskette you are using, use the DIR command (described in the chapter entitled ***Operation***). This command lists all filenames on the diskette, except for the two important system files that you will never need to access.

Filenames and File Specifications

For the PC to distinguish between individual files, each file must have its own *filename*. When you want to indicate a file to the PC, however, you use a *file specification*.

A:\DOCUMENT\TEXT.DOC

The file specification can be composed of up to three parts:

- Drive specification (A:)
- Path (\DOCUMENT\)
- Filename, which may include an extension (TEXT.DOC)

The *drive specification* tells the PC which drive holds the diskette containing your file. It always consists of one letter followed by a colon (A:). If the disk drive you want to access is the same as the default diskette drive, you can leave out the drive specification when typing the file specification.

The *path* is normally used only on hard disk systems. You can refer to ***Appendix G. DOS Quick Reference*** for further information.

The *filename* consists of up to eight characters. It may also have an extension, consisting of a period and up to three additional characters (for example: .DOC).

The extension is used to indicate different types of files. Program files, for example, often end with .SYS, .EXE, .COM, and so on. When naming files, you can create your own extensions, but you should avoid those mentioned above and a few others. Refer to ***Appendix G. DOS Quick Reference*** for more information.

You may use any character in a filename except these:

- Asterisk (*)
- Backslash (\)
- Bisected vertical bar (¦)
- Colon (:)
- Comma (,)
- Equal (=)
- Greater than (>)
- Less than (<)
- Plus (+)
- Question mark (?)
- Semicolon (;)
- Slash (/)
- Space ( )

You may use either upper or lower case letters when naming or referring to a file. The PC does not differentiate between upper and lower case letters in filenames.

Here are some examples of valid filenames:

LETTER1.TXT
NOTES
PRICELST.AUG
OPMANUAL.DOC
FILES.1
TELE#.LST

Try to choose names for your files that suggest their contents. Avoid filenames like the following, because you may have trouble remembering what the files contain:

~~&132!(1).XYZ~~
~~ABC(123).DRM~~

Some letter combinations cannot be used as filenames because they are already recognized by the PC as having other meanings. The following are examples of some names that may not be used:

~~AUX~~
~~CON~~
~~PRN~~
~~NUL~~

If you have any problems naming your files, refer to ***Appendix G. DOS Quick Reference*** or to the ***DOS Manual*** for specific information.

Wildcard Characters

Wildcard characters are used when you want to specify more than one file with just one file specification. These characters make it easy for you, for example, to copy a group of files or list a group of filenames.

The wildcard characters are the *question mark* (?) and the *asterisk* (*).

The question mark corresponds to any single character in a filename or an extension that occupies the same position. You can use question marks anywhere in a filename.

The file specification

```
LETTER?.TXT
```

refers to both files

```
LETTER1.TXT
LETTER2.TXT
```

The asterisk has the same effect as a group of question marks. You may never use more than one asterisk in a filename or extension.

For example,

```
LETTER*.*
```

can be used to refer to these files:

```
LETTER1.TXT
LETTER2.TXT
LETTER34.DOC
LETTER
```

However, if you wanted to specify all the files on a diskette, you would type:

```
*.*
```

which has the same meaning as:

```
????????.???
```

An asterisk can never have any characters specified after it. The following example is incorrect:

~~*LETTER.TXT~~

BASIC Interpreter

Your DOS diskette comes with a programming language called GW BASIC. BASIC is an acronym for Beginner's All-purpose Symbolic Instruction Code. GW BASIC is an interpreting BASIC. This means that when you enter a BASIC command into your PC, the PC immediately responds to that command.

If you want to write your own BASIC programs or run an application program written in BASIC, you have to load GW BASIC. You are told how to do this in the chapter entitled ***Operation***.

About Available Hardware

Certain equipment is available to improve your workstation:

Options

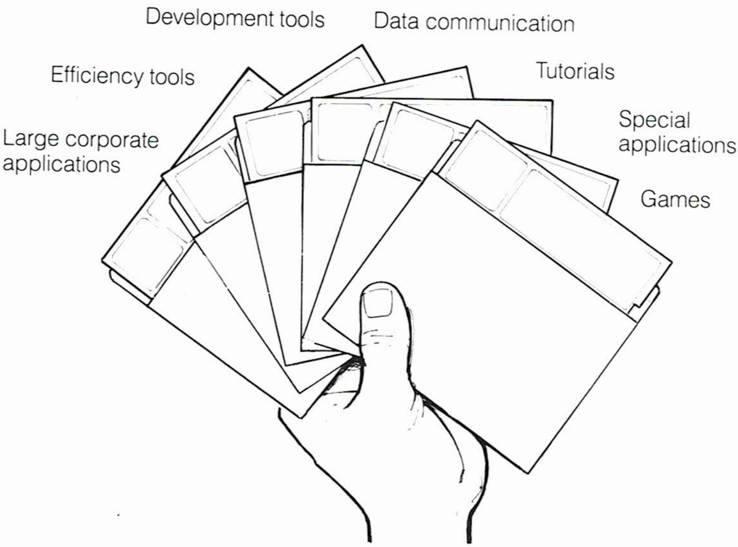
- ***Ergo-Disk***
- Built-in printer
- Built-in coupler
- Stand
- External diskette drive

Other hardware

- Matrix printers
- Daisy-wheel printers
- Plotters
- External modem

About Available Software

There are many programs available for special applications like word processing or calculation. Programs that enhance user-friendliness, communication, and much more are also available. Many programs include tutorial diskettes which enable the PC to teach you how to use the program.


Development tools
Data communication
Efficiency tools
Tutorials
Special applications
Large corporate applications
Games

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This chapter contains information on how to:

- Use some keys and commands with DOS
- Operate your monitor
- Load an application program written in GW BASIC
- Operate your ***Ergo-Disk***
- Operate your optional built-in printer

The information given here presupposes that you are already familiar with turning the PC on and off and with loading DOS. If you are not, study the chapter entitled ***Getting Started***.

If you are interested in further information about DOS, refer to ***Appendix G. DOS Quick Reference***, and to the ***DOS Manual***, available from your authorized ***Ericsson*** dealer. For specific technical information, you can turn to the ***Technical Reference Manual***, which is also available through your dealer.

Using Some of the Keys

This section explains how some of the keys on your keyboard function with DOS. That is, these functions are valid whenever the system prompt (A> in these examples) is displayed on the screen.

Remember, when you use an application program, you have to refer to the manual accompanying that program for information about any special key functions.

Two main groups of key functions are discussed. They are:

- Special key functions
- Editing key functions

Examples of *special key functions* are restarting DOS, making a hard copy of the screen, and entering commands.

The *editing key functions* are very convenient when you want to correct a command you have entered, or repeat a command several times, with or without changes.

Special Key Functions

Some of the keys located in the typewriter key area, and in the cursor control and numeric key area perform special functions.

Cancelling a Command

The **Esc** (escape) key cancels a command that you have typed in, but have not entered. It displays a backslash (\) and moves the cursor to the next line. Use this key when you have decided not to enter the command you typed in and want to start over.

- Press the **Esc** Key.

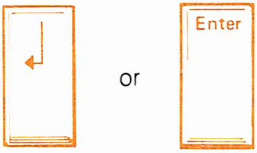
Correcting a Typing Error

The ← (backspace) key moves the cursor one position to the left. If a character is displayed immediately to the left of the cursor position, that character is erased.

- Press the ← key.

Entering a Command

When you have typed in a command and want to enter it into the PC,



- Press the ↵ key or the **Enter** key.

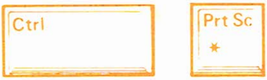
Printing the Screen Contents

To make a paper copy (*hard copy*) of the present contents of the screen,

- Press the ⇧ key together with the **Prt Sc** key.

Printing Whatever Is Being Displayed

To have everything that appears on the screen printed on the printer as it is displayed,



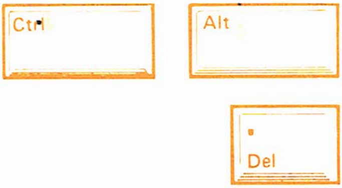
- Press the **Ctrl** key together with the **Prt Sc** key.

To stop printing,

- Press the **Ctrl** key together with the **Prt Sc** key.

Restarting DOS

To restart DOS,

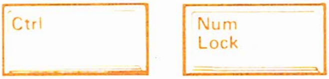


- Press the **Ctrl** key together with the **Alt** key and **Del** key.

Note: *When you restart DOS, everything that isn't stored on disk is erased.*

Stopping Screen Output Temporarily

To freeze screen output that is displayed too quickly for you to read,



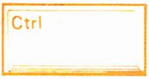
- Press the **Ctrl** key together with the **Num Lock** key.

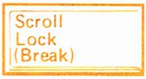
To resume output,

- Press any key.

Terminating a Command in Progress

To terminate a command that you have entered but do not want to continue,

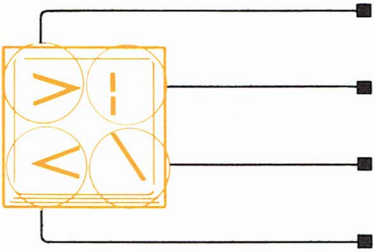




- Press the **Ctrl** key together with the **Break** key.

Using Multi-Character Keys

Depending on the layout of the keyboard you have purchased, individual keys may have three or four characters marked on them. The following example shows you how to type the individual characters on such a key.



- Press the ⇧ key together with the key.
- Press the ⇧ key together with the **Alt** key and the key.
- Press the **Alt** key together with the key.
- Press the key.

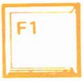
Editing Key Functions

The keys included in this group are found in the function key area, and the cursor control and numeric key area.

Using DOS, you can repeat a command several times, with or without changing it. The command (or text) you last entered is always stored in a *command line* in the PC. To copy this command line onto the screen, and perhaps change it, use the following keys.

Repeating a Command Character by Character

There may be times when you want to repeat a command. To display the last command that you entered on the screen,



- Press the **F1** key or the → key once for each character you want to display.

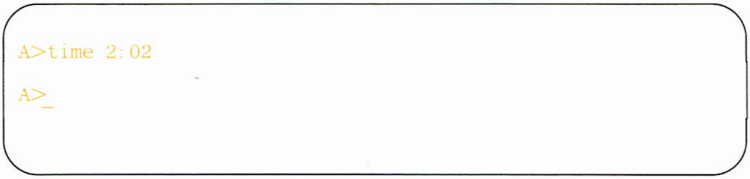
Try the following example with the TIME command.

1. Type in

   `time 2:02`

2. Press the ↵ key.

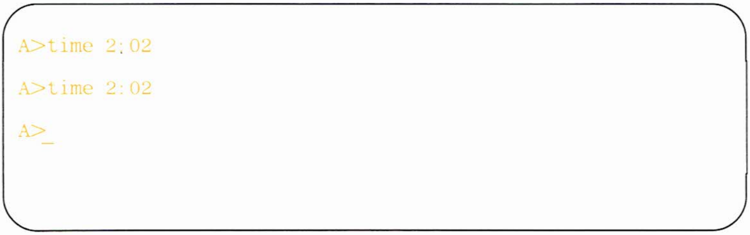
The screen should look like this:



```
A>time 2:02

A>_
```

3. Press the → key nine times and then press the ↵ key.

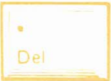
The result on the screen should look like this:



```
A>time 2:02

A>time 2:02

A>_
```

Deleting Characters

To erase a character in the command you last entered,



- Press the **Del** key once for each character you want to erase.

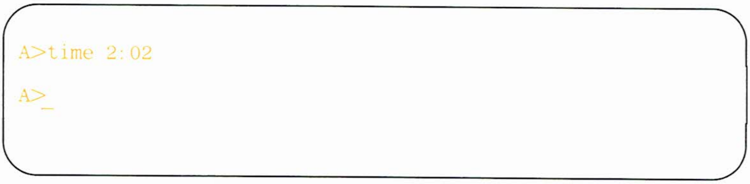
To see how this works, try the following example with the TIME command.

1. Type in

   `time 2:02`

2. Press the ↵ key.

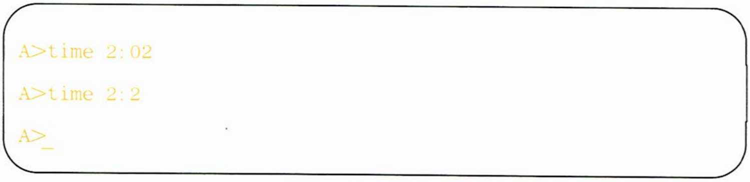
The screen should look like this:



```
A>time 2:02
A>_
```

3. Press the → key seven times.
4. Press the **Del** key once and then the → key again.
5. Press the ↵ key.

The result on your screen should look like this:



```
A>time 2:02
A>time 2:2
A>_
```

Inserting Characters

To insert new characters anywhere in the command you last entered without erasing existing characters,

- Press the **Ins** key and type in the new character(s).

To end insertion,

- Press the **Ins** key.

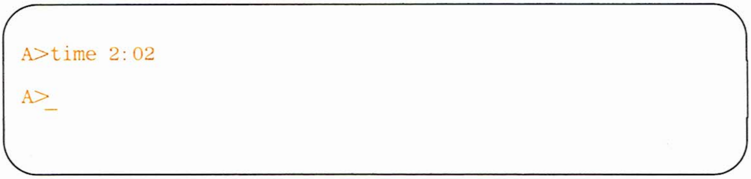
Try the following example with the TIME command.

1. Type in

   `time 2:02`

2. Press the ↵ key.

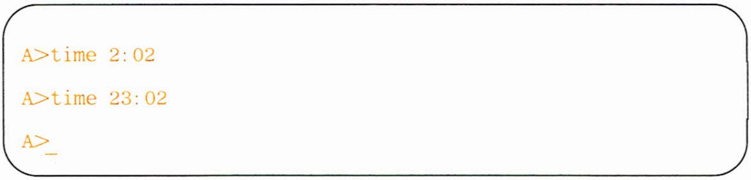
The screen should look like this:



```
A>time 2:02
A>_
```

3. Press the → key six times.
4. Press the **Ins** key once and then the **3** key.
5. Press the → key three times and then the ↵ key.

The result on your screen should look like this:



```
A>time 2:02
A>time 23:02
A>_
```

Repeating a Command

To repeat the command you last entered,

- Press the **F3** key.

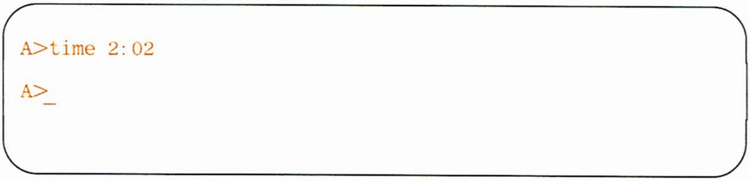
Try the following example with the TIME command.

1. Type in

   `time 2:02`

2. Press the ↵ key.

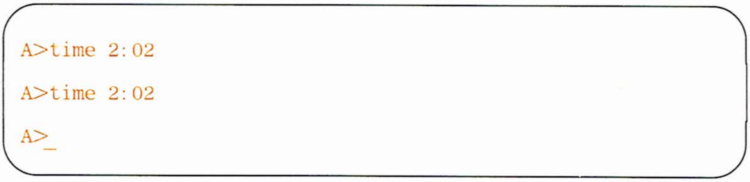
The screen should look like this:



```
A>time 2:02
A>_
```

3. Press the **F3** key.
4. Press the ↵ key to enter the command.

The result on your screen should look like this:



```
A>time 2:02
A>time 2:02
A>_
```

Note: *After you finish with these practice sessions, don't forget to reenter the correct time. See* ***Getting Started*** *for further information.*

Auto-Repeat Function

All alphanumeric keys and the keys on the numeric keypad have an *auto-repeat function*. If you keep one of these keys depressed more than 0.6 seconds, it starts to generate the character continuously.

Dead Keys

Some national keyboard versions (other than the US version) contain so-called *dead keys*. When you, for example, press an apostrophe ('), which is one of the dead keys, the character does not appear on the screen until you press the next corresponding key. Consequently, the dead key does not move the cursor. See ***Appendix A. Keyboard Layouts*** for further information about all dead keys.

Other Characters

Characters other than those signed on the keys can be displayed and printed out.

1. Press the **ALT** key and keep it depressed while you enter the decimal character code for the character on the numerical keypad.

The decimal character code can be found in ***Appendix F. DOS Character Set.***

Note: *Don't use the character codes 0–31 because they may affect the output on the screen.*

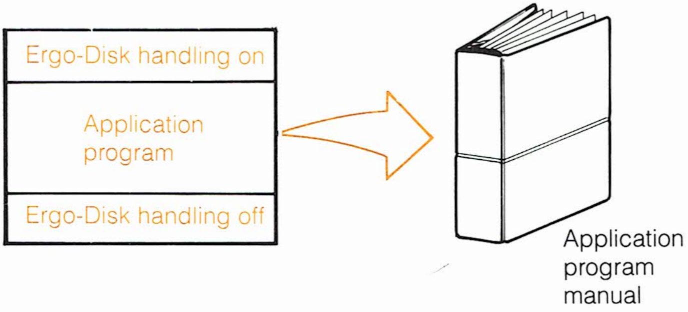
Ergo-Disk Handling

If an ***Ergo-Disk*** is installed in your PC, you have an excellent tool for easier execution of application programs and DOS commands. You can load the contents of your application program or your data diskette into the ***Ergo-Disk***.

When using the ***Ergo-Disk***, it is very important to transfer all modified files on the ***Ergo-Disk*** to a diskette before you power-off or restart DOS. If you don't, you lose all the information created during the session. Be careful when you power off or restart DOS. We advise, for the most part, that you run the application program from the ***Ergo-Disk*** and keep your data on a diskette in the physical diskette drive.

A new facility has been created to simplify the transfer of data and programs to and from the ***Ergo-Disk***. We call this facility ***Ergo-Disk*** *handling*.

When you want to start an application program, you can use the ***Ergo-Disk*** handling facility to enter the program or data into the ***Ergo-Disk***. When the information is entered, you can run the program according to the program manual. When you finish your application session, the ***Ergo-Disk*** handling facility helps you to transfer all modified files to the original diskette.



Ergo-Disk handling may be activated from the keyboard by pressing specific keys, or you may activate it from a specially created batch file.

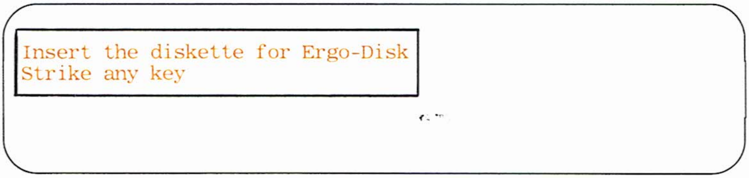
Note: *If the extra diskette drive is connected to the PC, the* ***Ergo-Disk*** *handling facility is disabled.*

Ergo-Disk Handling from the Keyboard

Running a Program from the Ergo-Disk

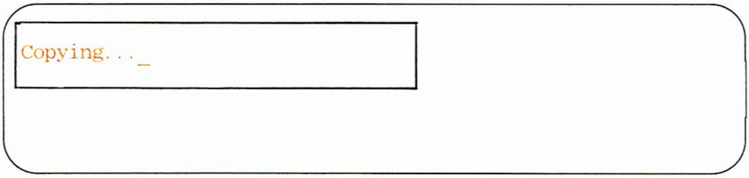
1. Make sure the system prompt (A> in this example) is displayed before continuing.
2. Press the **Ctrl** key together with the ⇧ and **P** keys.

The following information appears at the top left corner of the screen.



```
Insert the diskette for Ergo-Disk
Strike any key
```

3. Insert the program diskette in the drive.
4. Press the ↵ key.

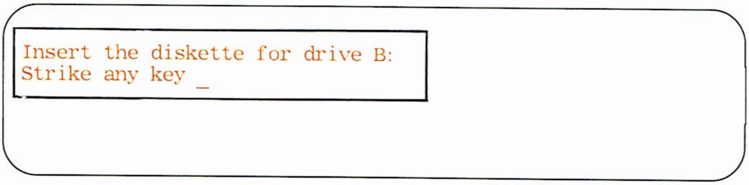


```
Copying..._
```

When **`Copying..._`** disappears, the contents of the program diskette are copied to the ***Ergo-Disk***.

5. Start your application program with the diskette still in the drive, according to the procedure described in the application program manual.

When the application program addresses drive B: (the data diskette) for the first time, the diskette drive is changed to B: and the ***Ergo-Disk*** is named A:. The following message appears on the screen:



```
Insert the diskette for drive B:
Strike any key _
```

6. Remove the program diskette and insert the data diskette into the drive.
7. Press the ↵ key.

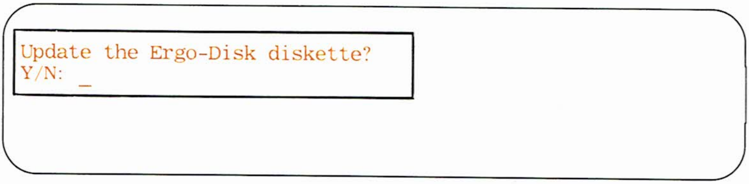
Now you can run the application program as you would do if you had two diskette drives. Also, the ***Ergo-Disk*** is much faster than a normal diskette drive.

When you want to end the application program session, follow the instructions in the application program manual.

When the system prompt appears on the screen:

8. Press the **Ctrl** key together with the ⇧ and the **O** (the letter O) keys.

If any information on the ***Ergo-Disk*** has been changed, the following message appears:



```
Update the Ergo-Disk diskette?
Y/N: _
```

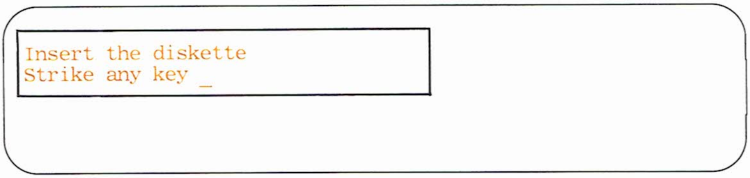
If you want to update the diskette,

9. Type in

   y

10. Press the ↵ key.

The following message appears on the screen:

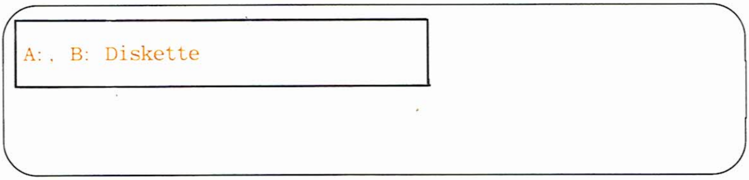


```
Insert the diskette
Strike any key _
```

11. Remove the data diskette and insert the program diskette in the drive.

12. Press the ↵ key.

The PC now updates your program diskette with the information from the ***Ergo-Disk***. During the updating, the screen shows **`Copying..._`**. When the copying is finished, the following message appears for five seconds on the screen:



```
A:, B: Diskette
```

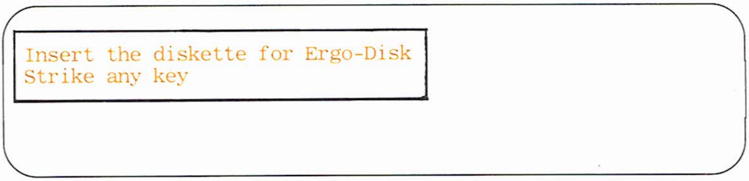
This message tells you that the identity of the diskette drive is changed back to its default name.

Data on the Ergo-Disk

1. Make sure the system prompt (A> in this example) is displayed before continuing.

2. Press the **Ctrl** key together with the ⇧ and **D** keys.

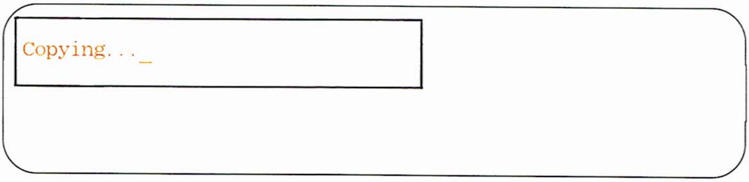
The following message appears at the top left corner of the screen.



```
Insert the diskette for Ergo-Disk
Strike any key
```

3. Insert the data diskette in the drive.
4. Press the ↵ key.

The following message appears on the screen:



```
Copying..._
```

When **Copying...** disappears, the contents of the data diskette are copied to the ***Ergo-Disk***. The identity for the ***Ergo-Disk*** becomes B:.

5. Remove the data diskette and insert the program diskette. Start your application program according to the procedure described in the application program manual.

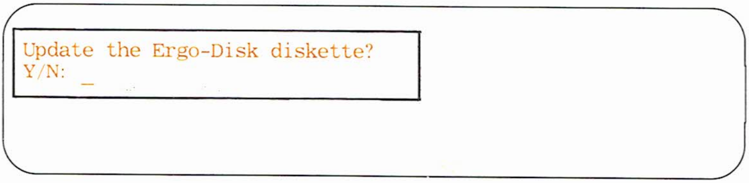
Now you can run the application program as you would do if you had two diskette drives.

When you want to end the application program session, follow the instructions in the application program manual.

When the system prompt appears on the screen:

6. Press the **Ctrl** key together with the ⇧ and the **O** (the letter O) keys.

If any information on the ***Ergo-Disk*** has been changed, the following message appears:



```
Update the Ergo-Disk diskette?
Y/N: _
```

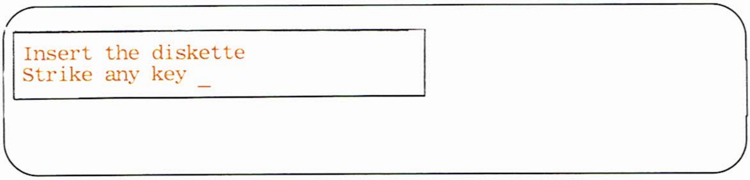
We recommend that you always update the diskette.

7. Type in

   y

8. Press the ↵ key.

The following message appears on the screen:

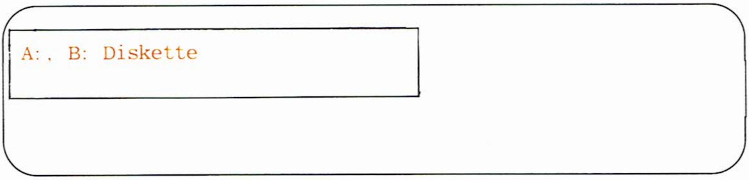


```
Insert the diskette
Strike any key _
```

9. Remove the program diskette and insert the data diskette into the drive.

10. Press the ↵ key.

The PC now updates your data diskette with the information from the ***Ergo-Disk***. During updating, the screen shows **`Copying..._`**. When the copying is finished, the following message appears for five seconds on the screen:



```
A:, B: Diskette
```

This message tells you that the identity of the diskette drive is changed back to its default name.

You can also use the ***Ergo-Disk*** handling facility from a batch file containing DOS commands. See the section entitled ***Ergo-Disk Handling Using a Batch File***.

Disabling the Ergo-Disk

You cannot start certain applications that do not run under DOS if the ***Ergo-Disk*** is active. To run such programs, disable the ***Ergo-Disk*** by pressing the **Ctrl** and left-hand ⇧ keys simoultaneously at power-on or when restarting.

A second restart (without holding the **Ctrl** and ⇧ keys) enables the ***Ergo-Disk*** again.

Using DOS

Only the most frequently used commands are described here. When you need more advanced commands, refer to ***Appendix G. DOS Quick Reference***.

With the commands discussed here, you can perform the following tasks:

- Changing default drive (I)
- Setting date and time, DATE, TIME (I)
- Listing filenames, DIR (I)
- Formatting a diskette, FORMAT (E)
- Creating a system diskette, DOSGEN (E)
- Transferring a system to a program diskette, DOSXFER (E)
- Copying a diskette, DISKCOPY (E)
- Copying a file, COPY (I)
- Checking a diskette, CHKDSK (E)
- Renaming a file, RENAME (I)
- Erasing a file, ERASE (I)

External commands (E) are files located on the DOS diskette. To run the commands labelled as E, the DOS diskette must be in the drive. Internal commands (I) are loaded when you load DOS. They are always available when DOS is loaded.

Some Terms

There are some terms you need to know before you start. Some of them are displayed on the screen when you use some of the commands.

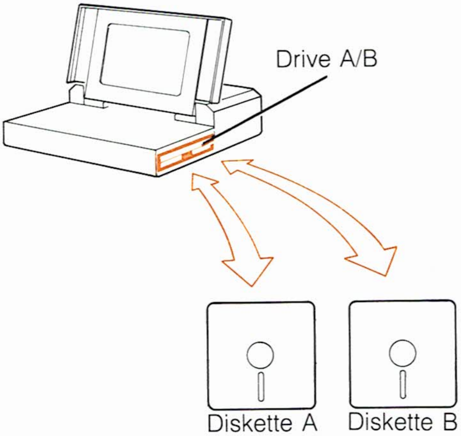
- *DOS diskette:* The copy of the original diskette containing the MS-DOS operating system that came with your ***Ericsson Portable PC***. The computer uses the programs on this diskette to coordinate hardware functions, as well as to execute system commands such as FORMAT and DISKCOPY.
- *Source diskette:* The diskette being copied. The computer only reads from this diskette.
- *Target diskette:* The diskette that is becoming the copy or being formatted. The computer writes on this diskette.
- *One-Drive With Ergo-Disk* , *One-* and *Two-Drive Operation:* See the headings below.

One-Drive With Ergo-Disk Operation

The easiest way to handle DOS in a one-drive system with an optional ***Ergo-Disk*** is to follow the procedure given for ***One-Drive Operation***. You can also use the ***Ergo-Disk*** handling facility to simplify using some DOS commands. For information about this, see the heading ***Simplifying DOS Using the Ergo-Disk***.

One-Drive Operation

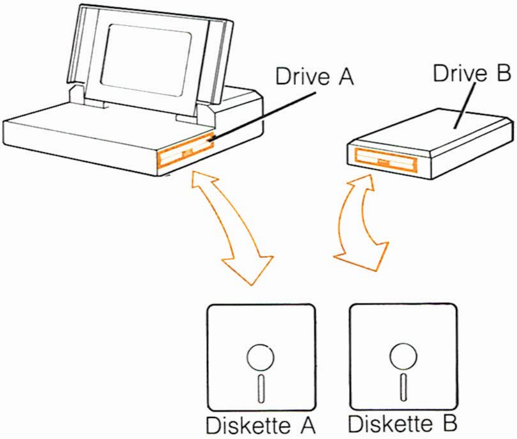
The DOS commands are described step-by-step for both a one-drive and a two-drive system. If your PC has no extra diskette drive, refer to ***One-Drive Operation***.



When you run DOS commands requiring two diskettes, the diskette drive changes identity during the execution. For example, if you want to copy a file from one diskette to another, you should think of one diskette (usually the source diskette) as *diskette A*, and of the other diskette (usually the target diskette) as *diskette B*. When the screen tells you to insert a diskette into drive A:, insert diskette A into the drive. When it tells you to insert a diskette into drive B:, insert diskette B.

Two-Drive Operation

If your system includes an optional external diskette drive, refer to ***Two-Drive Operation***.


Drive A
Drive B
Diskette A
Diskette B

In this case, the built-in diskette drive is referred to as *drive A:* and the external diskette drive as *drive B:*.

Changing Default Drive

In diskette drive systems, DOS assumes that drive A: is the *default drive* when you turn the PC on. It is possible for you to change default drives if you, for any reason, don't want the present default drive.

To change the default drive indicated by the system prompt (A>),

1. Type in

   b:

2. Press the ↵ key.

The default drive is now drive B:. This is indicated by the system prompt (B>).

It is just as simple to change it back.

3. Type in

   a:

4. Press the ↵ key.

The default drive is now drive A:.

Changing Date

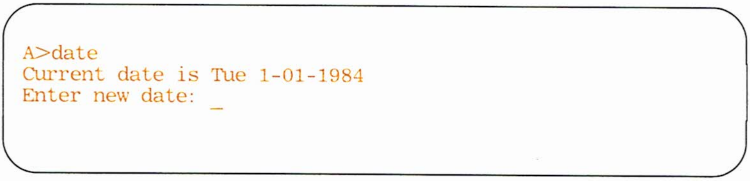
To change the date, or just check the date known to the PC,

1. Type in

   `date`

2. Press the ↵ key.

You get the following response from the PC:



```
A>date
Current date is Tue 1-01-1984
Enter new date: _
```

In this example, the format for entering the date follows the American custom (month – day – year). You can find information on how to enter the date in other national ways in ***Appendix B. Date and Time Entry Formats***.

For the date May 8, 1985, for example, enter the month as 5 or 05, the day as 8 or 08, and the year as 85 or 1985. You can use either hyphens (-) or slashes (/) to separate the numbers.

3. Type in the current date like this:

   `5-08-85`

4. Press the ↵ key.

If you press the ↵ key without entering a new date, the PC assumes the date on the screen to be correct.

The PC gives you the system prompt (A> in this example) as a response in both cases.

Changing Time

To change the time, or check the time known to the PC,

1. Type in

   `time`

2. Press the ↵ key.

You get the following response from the PC:

```
A>time
Current time is 16:39:53.45
Enter new time: _
```

The format for entering the time in this example is hours:minutes:seconds. Enter the time as for a 24-hour clock, and use a colon (:) to separate the numbers. When you press the ↵ key, the tenths and hundredths of a second are set to zero.

3. Type in the current time like this:

   `8:46:30`

4. Press the ↵ key.

If you press the ↵ key without entering a new time, the PC assumes the time on the screen to be correct.

The PC gives you the system prompt (A> in this example) as a response in both cases.

Listing Filenames (DIR)

The DIR command is an internal command used for listing filenames. You can use it when you want a list of the filenames stored on a diskette, or to be sure that a file specification used in a command refers to the files you intended it to.

The DIR command can be accompanied by one file specification; you may use wildcard characters.

To list all the files on the DOS diskette,

1. Insert the DOS diskette in the default drive.

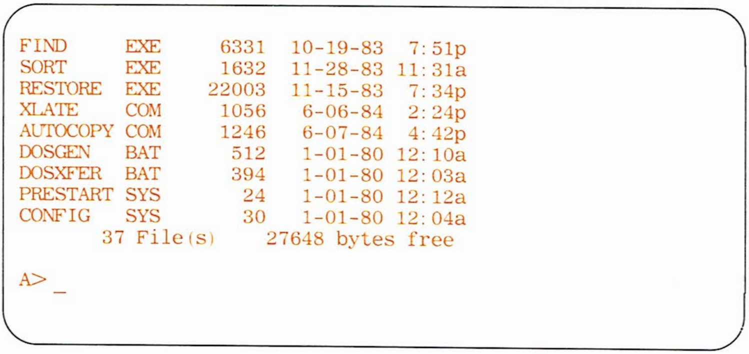
Make sure the system prompt (A> in this example) is displayed before continuing.

2. Type in

   `dir`

3. Press the ↵ key.

A list of all the files stored on the diskette is displayed. Your screen might look something like this example (your DOS diskette may contain other files):



```
FIND      EXE     6331  10-19-83   7:51p
SORT      EXE     1632  11-28-83  11:31a
RESTORE   EXE    22003  11-15-83   7:34p
XLATE     COM     1056   6-06-84   2:24p
AUTOCOPY  COM     1246   6-07-84   4:42p
DOSGEN    BAT      512   1-01-80  12:10a
DOSXFER   BAT      394   1-01-80  12:03a
PRESTART  SYS       24   1-01-80  12:12a
CONFIG    SYS       30   1-01-80  12:04a
        37 File(s)     27648 bytes free

A> _
```

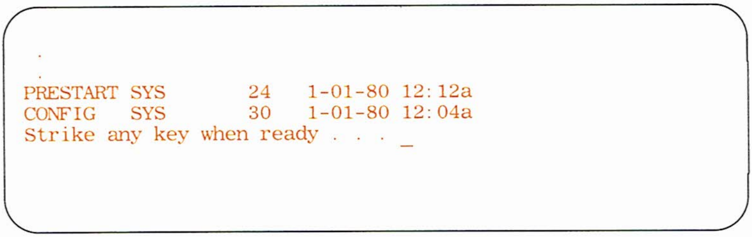
If the diskkette contains many files, you probably noticed that the first filenames that were displayed disappeared from the screen very quickly to make room for the others. If you add the */p switch* to the DIR command, the list of filenames stops when the screen is full so that you can read it.

3. Type in

`dir /p`

4. Press the ↵ key.

When the screen is full, the output stops and a message is displayed requesting you to press any key to continue.



```
.
.
PRESTART SYS        24    1-01-80 12:12a
CONFIG   SYS        30    1-01-80 12:04a
Strike any key when ready . . . _
```

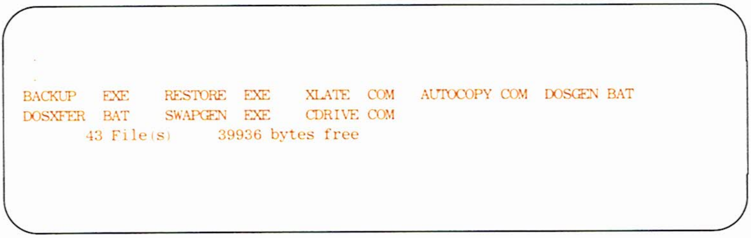
If you prefer to have all the filenames on the diskette displayed at once, use the */w switch*.

5. Type in

`dir /w`

6. Press the ↵ key.

Your screen may look something like this:



```
.
.
BACKUP   EXE     RESTORE  EXE     XLATE    COM     AUTOCOPY COM   DOSGEN BAT
DOSXFER  BAT     SWAPGEN  EXE     CDRIVE   COM
        43 File(s)     39936 bytes free
```

If you want to list only the filenames having the extension .EXE,

5. Type in

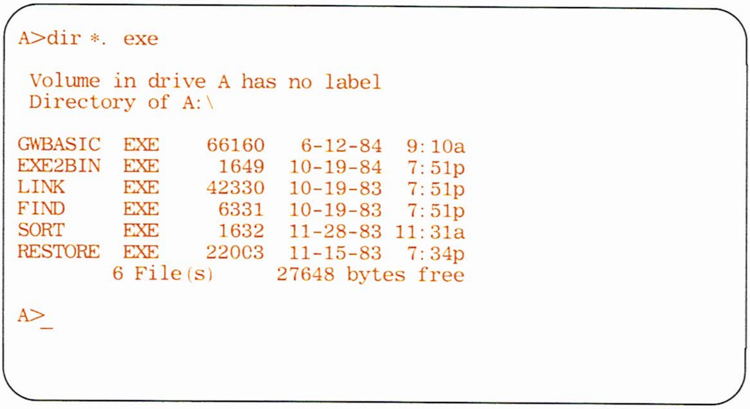
`dir *.exe`

or

`dir *.exe/p`

6. Press the ↵ key.

Your screen may look something like this:



```
A>dir *. exe

 Volume in drive A has no label
 Directory of A:\

GWBASIC  EXE    66160   6-12-84  9:10a
EXE2BIN  EXE     1649  10-19-84  7:51p
LINK     EXE    42330  10-19-83  7:51p
FIND     EXE     6331  10-19-83  7:51p
SORT     EXE     1632  11-28-83 11:31a
RESTORE  EXE    22003  11-15-83  7:34p
        6 File(s)     27648 bytes free

A>_
```

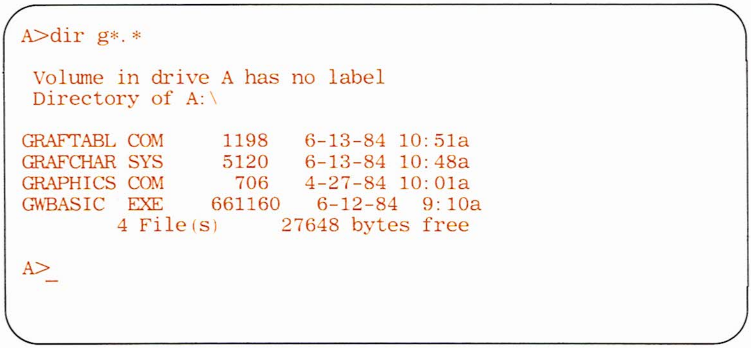
If you want to list only those filenames beginning with the letter G,

7. Type in

   `dir g*.*`

8. Press the ↵ key.

Your screen may look something like this:



```
A>dir g*.*

 Volume in drive A has no label
 Directory of A:\

GRAFTABL COM     1198   6-13-84 10:51a
GRAFCHAR SYS     5120   6-13-84 10:48a
GRAPHICS COM      706   4-27-84 10:01a
GWBASIC  EXE   661160    6-12-84  9:10a
        4 File(s)     27648 bytes free

A>_
```

Formatting a Diskette (FORMAT)

You must prepare (*format*) new diskettes for storing files before you can use them in your PC. To do this, use the FORMAT command.

The FORMAT command creates a *data diskette*, which can only be used for storing files. A diskette you can use to start the PC, instead of using your DOS diskette, is called a *system diskette*. The following section, ***Creating a System Diskette (DOSGEN)***, gives you that procedure.

A data diskette has more free space than a system diskette, but it cannot be used to start the PC. If you are going to use the diskette only for storing data, the system files are unnecessary.

The FORMAT program performs the following steps:

- First, FORMAT prepares a diskette for having files stored on it. At the same time, the program checks to see if the diskette has any *bad sectors*. There are parts of the diskette that cannot be used. If your diskette has any bad sectors, format the diskette again. If the bad sectors remain, destroy the diskette and format another.
- Then, FORMAT creates a directory in which DOS will later store filenames and statistics about the files it stores on the diskette.

When the FORMAT program is completed, a report is displayed which tells you the following:

- Total diskette space
- Defective space, if any
- Space available for storing your files

Note *FORMAT erases all information previously stored on the diskette, so use it carefully!*

In the following two sections, ***In a One-Drive Operation*** and ***In a Two-Drive Operation***, you learn how to format a data diskette. Read the section that corresponds to your PC. Follow tthe procedure for ***One-Drive Operation*** if your PC has an optional ***Ergo-Disk***.

In a One-Drive Operation

1. Insert the DOS diskette in the drive.

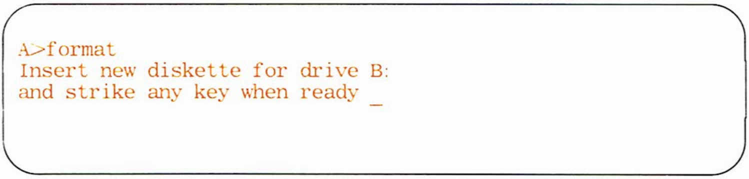
Make sure the system prompt (A> in this example) is displayed before continuing.

2. Type in

   `format b:`

3. Press the ↵ key.

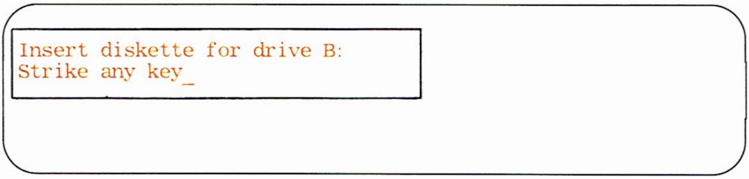
The following message appears on the screen:



```
A>format
Insert new diskette for drive B:
and strike any key when ready _
```

4. Remove the DOS diskette from the drive and insert the new diskette.
5. Press the ↵ key.

If your system has an ***Ergo-Disk***, a message appears in the upper left corner of the screen which tells you to insert the diskette for drive B:.



```
Insert diskette for drive B:
Strike any key_
```

6. Press the ↵ key (you inserted the diskette for drive B: in Step 4).

The PC formats your diskette. When the formatting is completed (after about one minute), your screen looks like this:

```
A>format b:
Insert new diskette for drive B:
and strike any key when ready

Formatting....

Format complete

    362496 bytes total disk space
    362496 bytes available on disk

Format another (Y/N)?_
```

The FORMAT procedure has been successfully completed. You can press the **y** key and repeat the process, or

6. Press the **n** key

The system prompt tells you that the PC is ready for your next command.

In a Two-Drive Operation

1. Insert the DOS diskette in drive A:.

Make sure the system prompt (A> in this example) is displayed before continuing.

2. Type in

   `format b:`

3. Press the ↵ key.

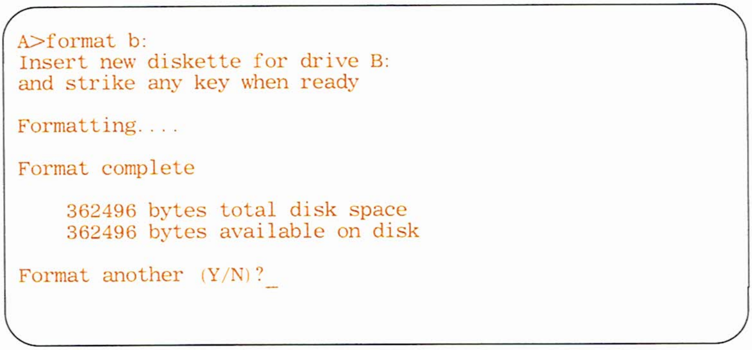
The following message appears on the screen:

```
A>format b:
Insert new diskette for drive B:
and strike any key when ready—
```

4. Insert the new diskette in drive B:.

5. Press the ↵ key.

The PC formats your diskette. When the formatting is completed (after about one minute), your screen looks like this:



```
A>format b:
Insert new diskette for drive B:
and strike any key when ready

Formatting....

Format complete

     362496 bytes total disk space
     362496 bytes available on disk

Format another (Y/N)?_
```

The FORMAT procedure has been successfully completed. You can press the **y** key and repeat the process, or

6. Press the **n** key

and the system prompt is displayed.

Creating a System Diskette (DOSGEN)

NB!?

You can prepare new diskettes for use in your PC in two ways. You can use either the FORMAT command, described in the previous section entitled ***Formatting a Diskette (FORMAT)***, or the DOSGEN command. The DOSGEN command creates a *system diskette* which you can use to start your PC, the same way you use your DOS diskette.

Unlike the DOS diskette, the system diskette contains *only* those files necessary for starting the PC. Remember, the external commands (DISKCOPY, for example) can only be used with the DOS diskette.

The system diskette has more free space than the DOS diskette, which means that there is room for other files such as application programs. However, there is less space than on a data diskette which has been formatted using the FORMAT command.

The DOSGEN program performs the following steps:

- First, DOSGEN prepares the diskette for having DOS files stored on it. At the same time, the program checks if the diskette has any *bad sectors*. These are parts of the diskette that cannot be used. If your diskette has any bad sectors, format the diskette again. If the bad sectors remain, destroy the diskette and format another.
- Next, the program creates a directory in which DOS will later store filenames and statistics about the files it stores on the diskette.
- Then, DOSGEN copies the necessary files to the target diskette.
- Finally, the DOSGEN program displays a report which tells you the following:
  - Total disk space
  - Space used for system files
  - Defective space, if any
  - Space available for storing your files

In the following two sections, ***In a One-Drive Operation*** and ***In a Two-Drive Operation***, you learn how to create a system diskette. Read the section that corresponds to your PC. Follow the procedure for ***One-Drive Operation*** if your PC has an optional ***Ergo-Disk***.

***Note** The DOSGEN command erases any files already stored on the target diskette, so be careful!*

DOSGEN does not transfer ERICLOCK.COM or AUTOEXEC.BAT. If you want these files on the new system diskette, copy them with the COPY command, described later in this chapter.

In a One-Drive Operation

1. Insert the DOS diskette in the drive.

Make sure the system prompt (A> in this example) is displayed before continuing.

2. Type in

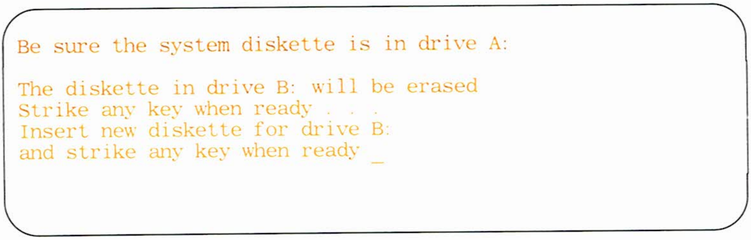
dosgen

3. Press the ↵ key.

The screen tells you that the diskette in drive B: will be erased. You should think of the target diskette as the diskette in drive B:.

4. Press the ↵ key.

Your screen should now look like this:



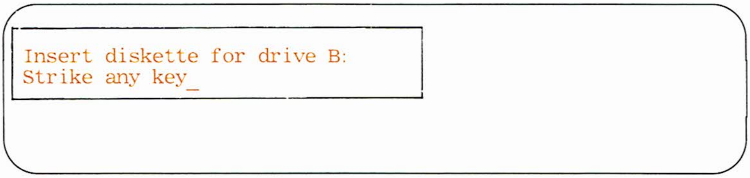
```
Be sure the system diskette is in drive A:

The diskette in drive B: will be erased
Strike any key when ready . . .
Insert new diskette for drive B:
and strike any key when ready _
```

DOS now tells you to insert the target diskette.

5. Remove the DOS diskette from the drive and insert the target diskette.

6. Press the ↵ key.

If your PC has an ***Ergo-Disk***, the following information appears in the top left corner of the screen:



```
Insert diskette for drive B:
Strike any key_
```

You have already inserted the target diskette, so

7. Press the ↵ key.

Your PC now formats your diskette. After approximately one minute, the system tells you that the formatting procedure is complete and asks if you want to format another diskette. If you don't want to format another,

8. Type in

```
n
```

Follow the instructions given on the screen. You have to insert the DOS and the target diskettes several times until DOSGEN copies the necessary files. DOSGEN prompts you to insert the diskette for drive B: or for drive A: when necessary.

Note: *You may create only one system diskette with each DOSGEN command.*

When the system prompt appears, the procedure is completed. You can now use the new system diskette for storing programs.

In a Two-Drive Operation

1. Insert the DOS diskette in drive A:.

   Make sure the system prompt (A> in this example) is displayed before continuing.

2. Type in

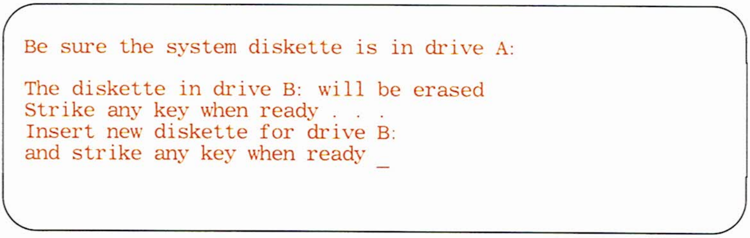
   dosgen

3. Press the ↵ key.

The PC tells you to be sure that the DOS diskette is in drive A:, and that the diskette in drive B: will be erased.

4. Press the ↵ key.

Your screen should now look like this:



```
Be sure the system diskette is in drive A:

The diskette in drive B: will be erased
Strike any key when ready . . .
Insert new diskette for drive B:
and strike any key when ready _
```

5. Insert the target diskette in drive B: and press the ↵ key.

Your PC now formats your diskette. After approximately one minute, the system tells you that the formatting procedure is complete and asks if you want to format another diskette. If you don't want to format another:

6. Type in

   n

DOSGEN now copies the necessary files. When the system prompt appears, the procedure is completed. You can now use the new system diskette for storing programs.

Note: *You may create only one system diskette with each DOSGEN command.*

Transferring a System to a Program Diskette (DOSXFER)

If you have a program diskette and want to have the system generated on it, you should use Transferring DOS (DOSXFER). This is the simplest way to copy the system files over to a previously formatted diskette. In this case, you cannot use DOSGEN because that would format your program diskette, thereby erasing all information on the diskette.

The DOSXFER command creates a *system diskette* which you can use to start your PC, just as you use your DOS diskette.

Unlike the DOS diskette, the system diskette contains *only* those files necessary for starting the PC. Remember, the external commands (FORMAT, for example) can only be used with the DOS diskette.

The system diskette has more free space than the DOS diskette, which means that there is room for your application programs. However, it has less space than a data diskette which has been formatted using the FORMAT command.

The DOSXFER program copies the necessary files to space which is already prepared on the target diskette. DOSXFER does not transfer ERICLOCK.COM or AUTOEXEC.BAT. If you want these files on the new system diskette, copy them with the COPY command, described later in this chapter.

The following two sections, ***In a One-Drive Operation*** and ***In a Two-Drive Operation***, explain how to create a system on your program diskette. Read the section that corresponds to your PC. Follow the procedure for ***One-Drive Operation*** if your PC has an optional ***Ergo-Disk***.

In a One-Drive Operation

1. Insert the DOS diskette in the drive.

   Make sure the system prompt (A> in this example) is displayed before continuing.

2. Type in

   ```
   dosxfer
   ```

3. Press the ↵ key.

After a few seconds, the PC tells you to be sure that the DOS diskette is in the drive. If so,

4. Press the ↵ key.

(You inserted the DOS diskette in Step 1. The DOS diskette is a system diskette.)

DOS now tells you to insert the target diskette. You should think of this diskette as *diskette B*.

5. Remove the DOS diskette from the drive and insert the target diskette.
6. Press the ↵ key.

If your PC has an ***Ergo-Disk***, the message telling you to insert the diskette for drive A: or drive B: (whichever is appropriate at the moment) appears at the upper left corner of the screen.

Continue to follow the text on the screen. Each time the screen says

Insert diskette for drive A: → Insert the DOS diskette
Insert diskette for drive B: → Insert the target diskette

After several diskette changes, the screen shows that the system is transferred. Continue to change diskettes and press ↵ as the screen instructs you.

DOSXFER now copies the necessary files. For each file being copied you have to change diskettes twice.

When the system prompt appears, the procedure is completed. You can now use the program diskette to start your PC.

In a Two-Drive Operation

1. Insert the DOS diskette in drive A:.

   Make sure the system prompt (A> in this example) is displayed before continuing.

2. Type in

   ```
   dosxfer
   ```

3. Press the ↵ key.

After a few seconds, the screen tells you to be sure that the system diskette is in drive A:. If so,

4. Press the ↵ key.

(You inserted the DOS diskette in Step 1. The DOS diskette is a system diskette.)

5. Insert the target diskette in drive B:.

6. Press the ↵ key.

DOSXFER now copies the necessary files. When the system prompt appears, the procedure is completed. You can now use the program diskette to start your PC.

Copying a Diskette (DISKCOPY)

The DISKCOPY command is used to make an exact copy of a diskette. This is the easiest way for you to make backup copies of your important diskettes.

The DISKCOPY program performs following steps:

- First, DISKCOPY checks to see if the target diskette has been formatted. If not, DISKCOPY formats the diskette. If the diskette is already formatted, the copying procedure begins.
- The program then copies all information to the target diskette exactly as it is stored on the source diskette.

Note *DISKCOPY erases all information previously stored on the target diskette, so be careful!*

In the following sections, ***In a One-Drive With Ergo-Disk Operation***, ***In a One-Drive Operation*** and ***In a Two-Drive Operation***, you learn how to copy a diskette. Read the section that corresponds to your PC.

In a One-Drive With Ergo-Disk Operation

1. Insert the DOS diskette in the drive.

   Make sure the system prompt (A> in this example) is displayed before continuing.

2. Type in

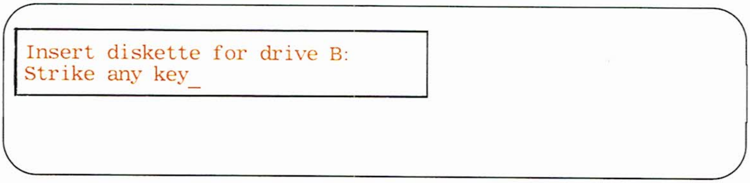
   ```
   diskcopy a: b:
   ```

3. Press the ↵ key.

The PC tells you to insert the source diskette in drive A: and the target diskette in drive B:.

4. Remove the DOS diskette and insert the source diskette in the drive.
5. Press the ↵ key.

The following message appears in the upper left corner of the screen:



```
Insert diskette for drive B:
Strike any key_
```

Insert the diskette for drive B: (the target diskette).

After about five seconds, the PC tells you to insert the source diskette.

6. Remove the target diskette from the drive and insert the source diskette.

7. Press the ↵ key.

After a few seconds, the PC again tells you to insert the target diskette.

8. Remove the source diskette from the drive and insert the target diskette.

9. Press the ↵ key.

If the diskette isn't formatted, the message `Formatting...` appears on the screen. When the diskette is formatted, the PC tells you to insert the source diskette in the drive and strike any key.

Depending on the size of the memory in your system, steps 6 through 9 are repeated. When the copying procedure is completed, the system asks if you want to copy another diskette.

The DISKCOPY procedure has been successfully completed. You can press the **y** key and repeat the process, or

10. Press the **n** key

and the system prompt reappears on the screen. You have nowsuccessfully copied your source diskette.

11. Remove the diskettes. Don't forget to label the copy diskette.

In a One-Drive Operation

1. Insert the DOS diskette in the drive.

Make sure the system prompt (A> in this example) is displayed before continuing.

2. Type in

```
diskcopy a: b:
```

3. Press the ↵ key.

The PC tells you to insert the target diskette in drive B:.

4. Insert the target diskette in the drive.

5. Press the ↵ key.

The PC now tells you to insert the source diskette in drive A:.

6. Insert the source diskette in the drive.

7. Press the ↵ key.

The PC now stores part of the contents of the diskette in the drive in its memory. When this process is completed (it takes a few seconds), the PC tells you to insert the target diskette in drive B:.

8. Insert the target diskette in the drive.

9. Press the ↵ key.

Depending on the size of the memory in your system, steps 6 through 9 are repeated. When this process is completed (it takes a few seconds), the PC asks if you want to copy another. You can press **y** and repeat the process, or

10. Type in

```
n
```

and the system prompt appears. You have now successfully copied your source diskette.

In a Two-Drive Operation

1. Insert the DOS diskette in drive A:.

Make sure the system prompt (A> in this example) is displayed before continuing.

2. Type in

   `diskcopy a: b:`

3. Press the ↵ key.

The screen tells you to insert the source diskette in drive A: and the target diskette in drive B:. When you have done so,

4. Press the ↵ key.

After about one minute, the PC asks if you want to copy another diskette.

The DISKCOPY procedure has been successfully completed. You can press the **y** key and repeat the process, or

5. Press the **n** key

and the system prompt appears on the screen. You have now successfully copied your source diskette.

6. Remove the diskettes. Don't forget to label the copy diskette.

Copying a File (COPY)

The COPY command is used to copy one or more files. You may copy a file to another file on the same diskette, or you may copy it to a different diskette. Use this command when you want to make a backup copy of an important file, or to create a new file based on an old file.

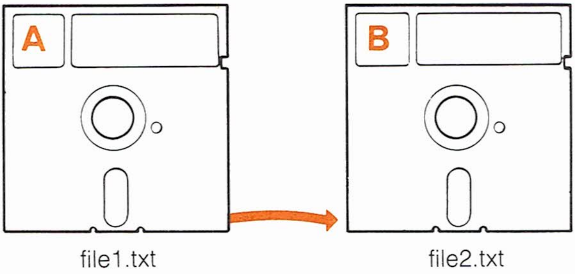
The COPY command can include two file specifications.

COPY *sourcefile targetfile*

The first file specification, *sourcefile*, refers to the file that is to be copied; *targetfile* refers to the file that becomes the copy.

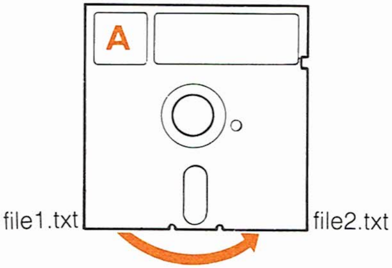
```
COPY a:file1.txt b:file2.txt
```

In the example above, the file in drive A: will be copied onto the diskette in drive B:. If you use wildcard characters (* ?), the specifications may refer to several files.

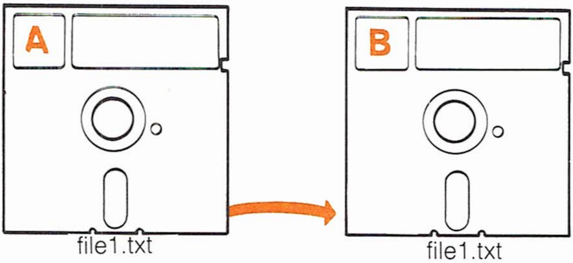


If you leave out a drive specification, DOS assumes that you mean the default drive. You may only omit both drive specifications when using different filenames for the source and target files. The following example results in two identical files with different names on the same disk.

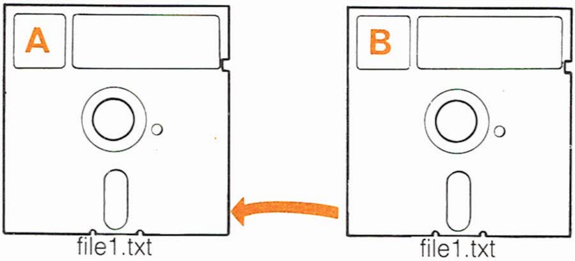
```
COPY file1.txt file2.txt
```



If you specify only the drive for the target file, DOS assumes that the source file is on the default drive and that you want the target file to have the same name as the source file. The following example results in two identical files with the same name on two different diskettes. The copy is in drive B:.



If you omit the entire target file specification and specify a drive other than the default drive for the source file, the target file is copied onto the disk in the default drive and given the same name as the source file. The following example results in two identical files with the same name on two different disks. The copy is in drive A:.



The wildcard characters are very useful with this command. For example, let's assume you have a disk containing the following files:

82STOCK.DEC
83STOCK.DEC
84STOCK.DEC
84STOCK.JAN
84STOCK.MAY
84STOCK.OCT

If you wanted to make copies of all of the STOCK files having the extension .DEC, you would enter:

```
COPY a:??stock.dec b:
```

The following example copies all files having the first two characters 84.

```
COPY a:84*.* b:
```

Note: *COPY erases any file on the target diskette that has the same name as the filename specified as the target filename, so use it carefully!*

In the following two sections, ***In a One-Drive Operation*** and ***In a Two-Drive Operation***, you learn how to copy files. Read the section that corresponds to your PC. If your PC has an optional ***Ergo-Disk***, follow the procedure given for ***One-Drive Operation***.

In a One-Drive Operation

To copy the PRESTART.SYS file from the DOS diskette to another diskette:

1. Insert the DOS diskette in the drive.

Make sure the system prompt (A> in this example) is displayed before continuing.

2. Type in

```
copy a:prestart.sys b:
```

3. Press the ↵ key.

target

The PC now tells you to insert the diskette for drive B: in the drive. If your PC has an optional ***Ergo-Disk***, a message appears in the upper left corner of the screen telling you to insert the diskette for drive B:.

4. Remove the source diskette and insert your target diskette.

5. Press the ↵ key.

DOS now copies from your source diskette to your target diskette. When the system prompt appears, the COPY procedure has been successfully completed and the PC is ready for your next command.

In a Two-Drive Operation

To copy the PRESTART.SYS file from the DOS diskette to another diskette:

1. Insert the DOS diskette in drive A:.

2. Insert your target diskette in drive B:.

Make sure the system prompt (A> in this example) is displayed before continuing.

3. Type in
   ```
   copy a:prestart.sys b:
   ```

4. Press the ↵ key.

When copying is completed, the system prompt reappears and the PC is ready for your next command.

Checking a Diskette (CHKDSK)

The external command CHKDSK is used when you want to check the status on your diskette. The command displays a report which tells you:

- Total disk space (in bytes)
- Numbers of files on the disk (even hidden files)
- Space available for storing your files (in bytes)

The following two sections, ***In a One-Drive Operation*** and ***In a Two-Drive Operation***, explain how to check a diskette. Read the section that corresponds to your PC.

In a One-Drive Operation

1. Insert the DOS diskette in the drive.

Make sure the system prompt (A> in this example) is displayed before continuing.

2. Type in

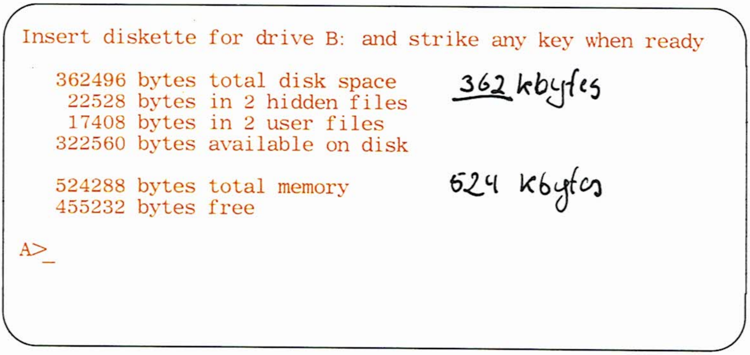
   chkdsk b:

3. Press the ↵ key.

The PC now tells you to insert the diskette for drive B:.

4. Remove the DOS diskette and insert the diskette that you want to check into the drive.
5. Press the ↵ key.

After a few seconds, your screen might look something like this:



```
Insert diskette for drive B: and strike any key when ready

   362496 bytes total disk space
    22528 bytes in 2 hidden files
    17408 bytes in 2 user files
   322560 bytes available on disk

   524288 bytes total memory
   455232 bytes free

A>_
```

362 kbytes

524 kbytes

When the system prompt appears, the procedure is completed.

In a Two-Drive Operation

1. Insert the DOS diskette in drive A:.

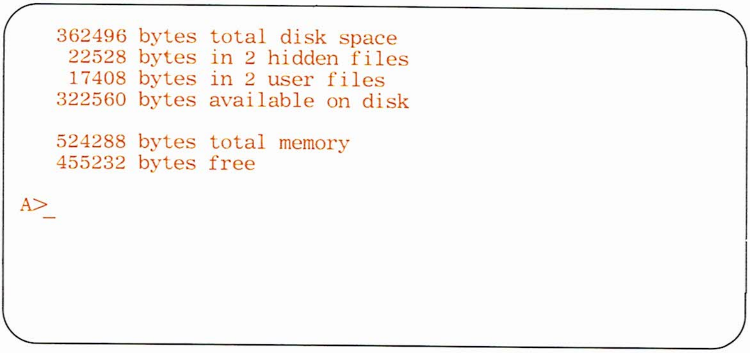
Make sure the system prompt (A> in this example) is displayed before continuing.

2. Type in

   chkdsk b:

3. Press the ↵ key.
4. Insert the diskette that you want to check in drive B:.
5. Press the ↵ key.

After a few seconds, your screen might look something like this:



```
   362496 bytes total disk space
    22528 bytes in 2 hidden files
    17408 bytes in 2 user files
   322560 bytes available on disk

   524288 bytes total memory
   455232 bytes free

A>_
```

The system prompt indicates that the procedure is completed.

Renaming a File (RENAME)

The internal command RENAME is used to change filenames. RENAME must include two file specifications. The first specification is the old filename; the second is the new filename.

The following example renames the file *oldfile.txt* to *newfile.txt*.

RENAME oldfile.txt newfile.txt

Let's assume that you have a file containing telephone numbers, called NUMBER. The filename doesn't clearly describe the contents of the file. So, you decide to rename it TELEPH#.LST.

1. Insert the diskette in the default drive.

Make sure the system prompt (A> in this example) is displayed before continuing.

2. Type in

```
rename number teleph#.lst
```

3. Press the ↵ key.

The system prompt reappears, indicating that the RENAME procedure has been successfully completed and DOS is ready for your next command.

Erasing a File (ERASE)

The internal command ERASE is used to erase a file. ERASE can include only one file specification, and wildcard characters may be used.

Note: *Always use this command very carefully, especially if you use wildcard characters. It erases files very quickly.*

To find out exactly which files will be erased by a certain ERASE command, first enter the DIR command with the same file specification. DIR displays the filenames that would be erased.

Let's assume the following files contain old information and you want to erase them:

```
PROD76.LST
PROD77.LST
PROD78.LST
PROD79.LST
```

To do this:

1. Insert the diskette in the default drive.

Make sure the system prompt (A> in this example) is displayed before continuing.

2. Type in

```
erase a:prod7?.lst
```

3. Press the ↵ key.

The system prompt reappears, indicating that the ERASE procedure has been successfully completed and DOS is ready for your next command.

DOS Utilities

Your DOS diskette contains several DOS utilities. This type of external command is not executed automatically. The execution is, instead, passed on to the user.

EDLIN is a utility used for line editing. It can be used to create and modify a text file.

DEBUG is a utility which enables you to check and debug application program modules for correct operation.

For further information on the EDLIN and DEBUG utilities, refer to ***Appendix G. DOS Quick Reference***.

Loading BASIC

Your DOS diskette contains the GW BASIC programming language. Let's assume that you want to start an application program called EXAMPLE1.BAS written in BASIC.

1. Insert the DOS diskette in the default drive.

Make sure that the system prompt (A> in this example) is displayed before continuing.

2. Type in

```
gwbasic b:EXAMPLE1.BAS
```

3. Press the ↵ key.

After a few seconds, the system tells you to insert the diskette for drive B:.

To load only GW BASIC, follow the steps above, leaving out the file specification in Step 2.

To return to DOS:

1. Type in

```
system
```

2. Press the ↵ key.

The screen now displays the system prompt.

Simplifying DOS with the Ergo-Disk

You can use the ***Ergo-Disk*** to simplify handling some of the DOS commands. In some cases, you must rename the ***Ergo-Disk*** as drive C:.

Creating a System Diskette using the Ergo-Disk

You can easily create a system diskette (DOSGEN or DOSXFER) using one diskette drive and the ***Ergo-Disk***.

1. Insert the DOS diskette in the drive.
2. Activate the ***Ergo-Disk*** handling facility by pressing Ctrl-⇧-P.
3. Start DOSGEN or DOSXFER. Refer to the section entitled ***Creating a System Diskette (DOSGEN)*** or ***Transferring a System to a Program Diskette (DOSXFER)***.

DOSGEN or DOSXFER copies the necessary files. When the system prompt appears, the procedure is completed.

4. Turn the ***Ergo-Disk*** handling facility off by pressing Ctrl-⇧-O (the letter O).

Defining the Ergo-Disk as Drive C:

1. Insert the DOS diskette.

Make sure the system prompt (A>) is displayed before continuing.

2. Type in

```
cdrive
```

3. Press the ↵ key.

Note: *This command restarts DOS.*

DOS restarts, loading the ***Ergo-Disk*** as drive C:.

When the system prompt appears, you may use the ***Ergo-Disk*** as a second diskette drive, drive C:, without activating the ***Ergo-Disk*** handling facility.

Copying a DOS Utility to the Ergo-Disk

The COPY command can be used to transfer a file to the ***Ergo-Disk*** from the diskette drive.

1. Define the ***Ergo-Disk*** as drive C:.
2. Type in

```
copy a:"chkdsk.com" c:
```

Follow the procedure described under the heading ***Copying a File***.

Copying a Diskette Using the Ergo-Disk

You can use the ***Ergo-Disk*** to make a copy of a diskette (using the DISKCOPY command). This is done in three steps. First, define the ***Ergo-Disk*** as drive C: (see the section entitled ***Defining the Ergo-Disk as Drive C:***). Then, copy the contents of the source diskette to the ***Ergo-Disk***. Finally, copy the contents of the ***Ergo-Disk*** to the target diskette.

1. Insert the DOS diskette.
2. Define the ***Ergo-Disk*** as drive C:.
3. Type in

```
diskcopy a: c:
```

Follow the procedure described under the heading ***Copying a Diskette***.

When the contents of the diskette are transferred to the ***Ergo-Disk***,

4. Insert the DOS diskette.
5. Type in

```
diskcopy c: a:
```

Follow the procedure described under the heading ***Copying a Diskette***.

Ergo-Disk Handling Using a Batch File

As well as activating the ***Ergo-Disk*** handling facility with keystrokes, you can also use it when the system prompt is displayed by typing in the new DOS commands *swap p*, *swap d* and *swap off*. The following table shows you which keystrokes relate to each command.

Ergo-Disk Handling

Command	Keystrokes
SWAP P	**Ctrl-⇧-P**
SWAP D	**Ctrl-⇧-D**
SWAP OFF	**Ctrl-⇧-O**

You may either type these commands in directly from the keyboard or run them from a batch file. A batch file to use an application program called START with the ***Ergo-Disk*** might look like this:

```
SWAP P
START
SWAP OFF
```

Creating a Batch File

You can create or modify a batch file for ***Ergo-Disk*** handling by using the utility SWAPGEN or a text editor. The SWAPGEN utility is on your DOS diskette. The batch file must be on the diskette that you will use for ***Ergo-Disk*** handling.

1. Insert the DOS diskette in the drive.

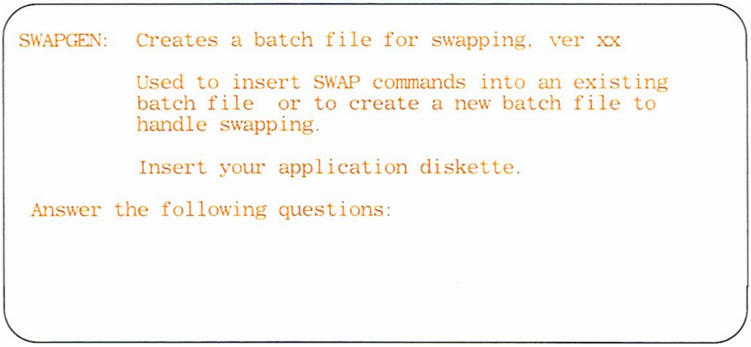
Make sure the system prompt (A> in this example) is displayed before continuing.

2. Type in

```
swapgen
```

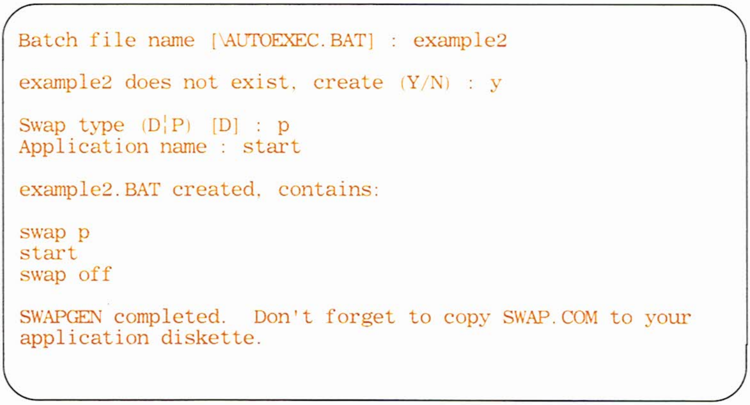
3. Press the ↵ key.

The following message appears on the screen:



```
SWAPGEN:  Creates a batch file for swapping, ver xx

          Used to insert SWAP commands into an existing
          batch file  or to create a new batch file to
          handle swapping.

          Insert your application diskette.

 Answer the following questions:
```

Let's assume that you want to create a new batch file named EXAMPLE2.BAT and use it for ***Ergo-Disk*** handling of the application program START. When you have finished the SWAPGEN command, the screen should look like this:



```
Batch file name [\AUTOEXEC.BAT] : example2

example2 does not exist, create (Y/N) : y

Swap type (D¦P) [D] : p
Application name : start

example2.BAT created, contains:

swap p
start
swap off

SWAPGEN completed.  Don't forget to copy SWAP.COM to your
application diskette.
```

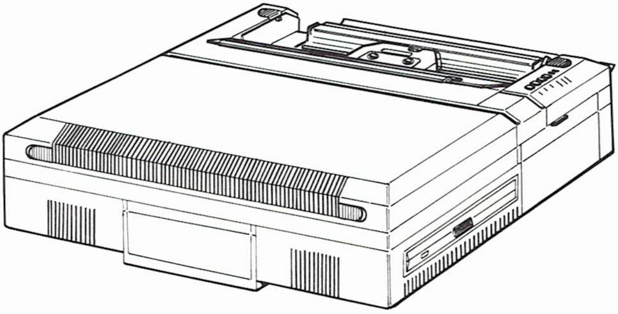
Using the Batch File

If your batch file has the name AUTOEXEC.BAT, the file loads automatically when you load DOS. If, however, you want to use a batch file with a different name for ***Ergo-Disk*** handling, do as follows:

1. Type the name of the batch file.
2. Press the ↵ key.
3. Follow the instructions given on the screen. These give basically the same procedure that you use when you handle the ***Ergo-Disk*** from the keyboard.

Using the Internal Printer

The optional built-in thermal printer is a *matrix type* printer with a print speed of 40 characters per second. It offers you normal, enlarged and compressed print, as well as graphics printing.



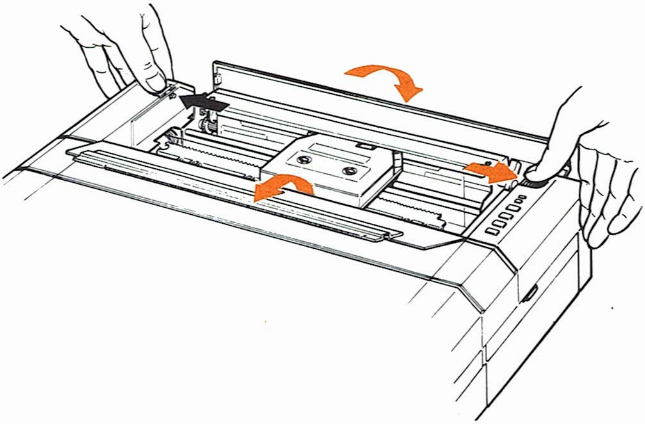
The printer uses single-sheet or roll paper which is either:

- Thermal (heat-sensitive) paper which does not require a ribbon
- Plain, non-thermal paper which requires that you use a heat-sensitive ribbon

fargebånd

Opening the Printer Compartment

1. Close the monitor. When you lower it below an 80° angle with the system unit, the screen turns itself off. It turns itself on again when you raise it above 80°. This does not affect the flow of data to the screen.
2. Slide the release buttons outward, fold back the rear cover, and pull the front cover up and forward.



Indicators

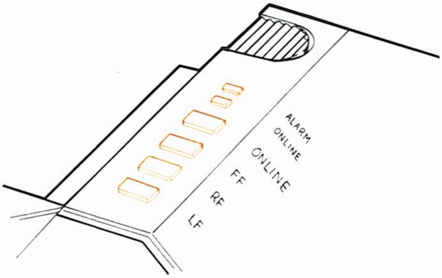
Your printer has two indicator lights, the ONLINE indicator and the ALARM indicator.

When the ONLINE indicator is:

- Lit, the printer is on-line and can print
- Not lit, the printer is off-line and cannot print

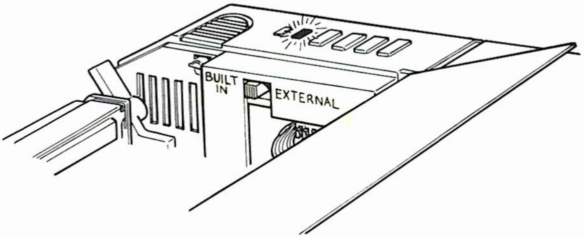
When the ALARM indicator is lit:

- The printer is out of paper.
- You have reached the ribbon end (if a ribbon cartridge is installed).
- The printer is malfunctioning (see the chapter entitled ***Help***).



On-Line

The printer goes on-line when you load DOS on the ***Ericsson Portable PC*** if there is paper loaded in the printer. If there is no paper in the printer, the ALARM light turns on.

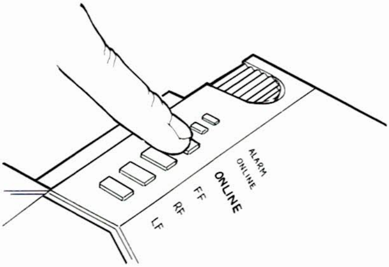


Note: *Always check to be sure that the BUILT IN/EXTERNAL switch is in the BUILT IN position.*

Stopping the Printer Temporarily

To stop the printer during printing,

1. Press the ONLINE switch.

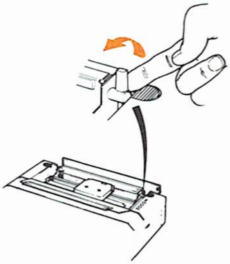


To resume printing,

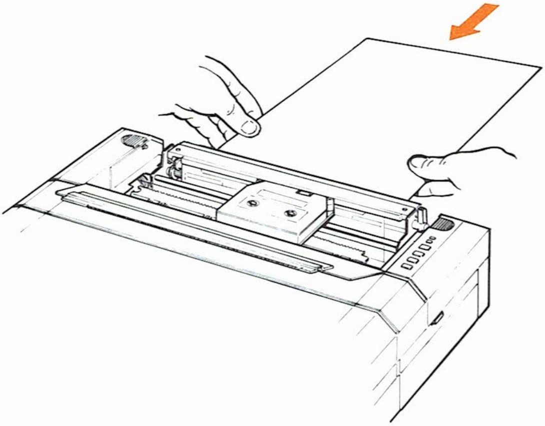
2. Press the ONLINE switch.

Loading the Paper

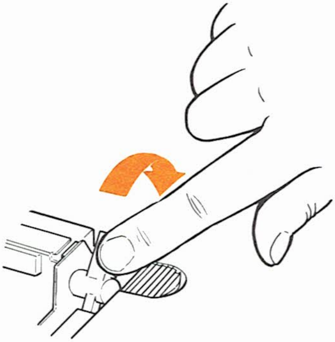
1. Set the paper release lever to the vertical position.



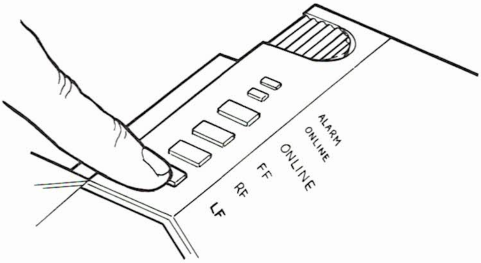
2. Load the paper between the printer's rollers.



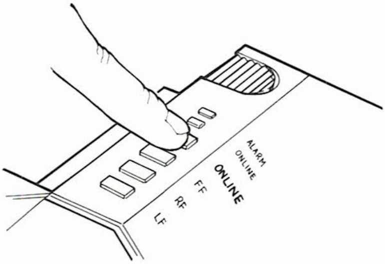
3. Return the release lever to the operating position.



4. Press the LF (line feed) switch to advance the paper into the printer.



5. Press the ONLINE switch.



Advancing the Paper One Line

To advance the paper one line,

1. If the ONLINE indicator is lit, press the ONLINE switch to take the printer off-line.
2. Press the LF (line feed) switch.
3. Switch the printer back on-line by pressing the ONLINE switch.

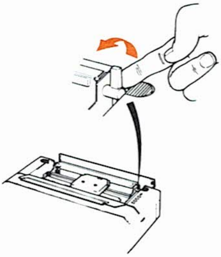
Reverse Feeding Paper

To reverse feed the paper,

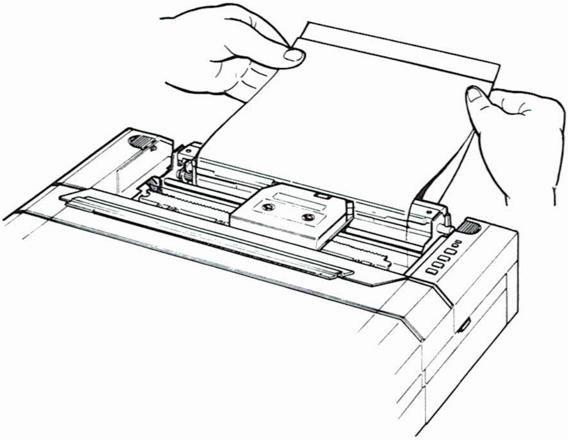
1. If the ONLINE indicator is lit, press the ONLINE switch to take the printer off-line.
2. Press the RF (reverse feed) switch.
3. Switch the printer back on-line by pressing the ONLINE switch.

Aligning the Paper

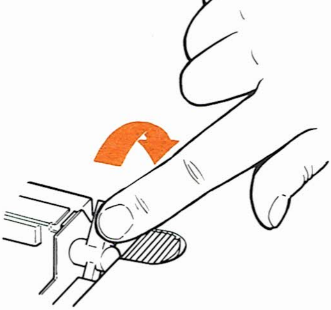
1. Set the paper release lever in the vertical position.



2. Align the paper as you would in an ordinary typewriter.



3. Return the paper release lever to the operating position.



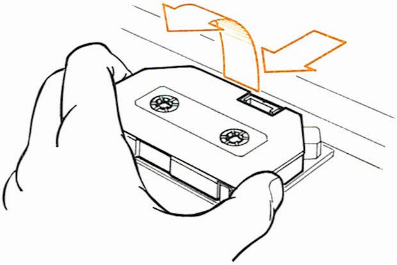
Advancing the Paper One Page

To advance the paper one page,

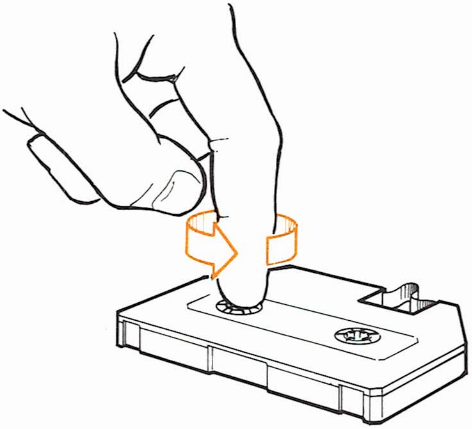
1. If the ONLINE indicator is lit, press the ONLINE switch to take the printer off-line.
2. Press the FF (form feed) switch.
3. Switch the printer back on-line by pressing the ONLINE switch.

Changing the Ribbon

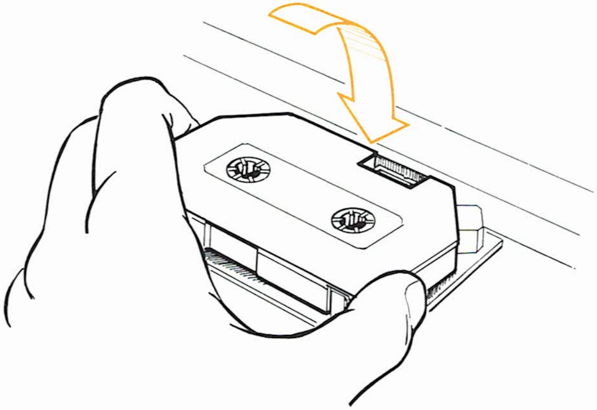
1. Remove the old ribbon cartridge by pushing the cartridge forward and lifting it.



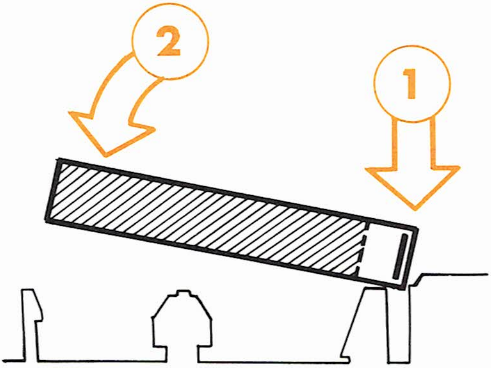
2. Tighten the ribbon tension on the new cartridge.



3. Insert the new ribbon cartridge. Be sure that the ribbon is between the print head and the paper.



4. Check the ribbon position.



Using an External Ericsson Printer

An external printer can be connected to the PC via the parallel 25 pin D connector.

1. Connect the printer to the PC.
2. Plug the external printer into a power outlet.
3. Set the BUILT IN/EXTERNAL switch to the EXTERNAL position.
4. Turn the printer on.
5. Turn the PC on.

Refer to the ***User's Manual*** for the printer for more information. Also refer to ***Appendix D. Connections***.

Help

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Read This First

Your ***Ericsson Portable PC*** has been designed for trouble-free operation. However, things may go wrong occasionally. In most cases, the system prints an *error message* on the screen telling you of the problem. In some cases, there is no error message displayed, but the system acts so abnormally that you notice the problem immediately. This manual will help you to restore proper system operation.

If, for any reason, you can't determine what the problem is and you can't restore proper operation, contact your authorized ***Ericsson*** distributor.

Follow the steps below when a problem occurs.

- If you are using the following DOS commands: CHKDSK, COPY, DIR, DISKCOPY, DOSGEN, DOSXFER, DELETE, ERASE, FORMAT, or RENAME and an error message occurs, refer to the section entitled ***DOS Error Messages***.
- Don't become alarmed. You can correct most problems yourself in just a few minutes.
- Don't turn the system off until you know what the problem is.
- Write down the following:
  - Error message(s), if any.
  - Audible signals, such as how many beeps at power-on.
  - A short description of what you were doing (powering-on, loading a program, and so on) and what problem occurred (blank screen, keyboard malfunction, and so on).

  This information is important; if you decide to have the PC serviced, your service representative will want to know your observations of the problem.
- Before you have the PC serviced, do a few simple tests using the checklists in the following section to see whether you can correct the fault.

Problem Checklists

A problem may occur either during the DOS or application program startup or when the session is underway. This section is mainly concerned with problems that occur during startup.

There are different types of problems that may occur during your session, depending on the DOS functions you may be using or the application program you are running. In general, these involve the same types of faults occurring at startup, and also the following:

- A message appears. To find the cause of the problem, refer first to your application program manual, then to the section entitled ***DOS Error Messages*** in this chapter.
- Other types of hardwware errors occur. End your session and check the following tables. They cover the main types of problems that may arise while starting your DOS or application session.

Problems at Power-On

Problem Area	Observations	Action
System unit	Power-on indicator unlit.	See heading ***Checking Voltage Selector Switch, Fuse and Connectors***.
	Fan does not work.	Service needed.
	You hear SOS beeps. (SOS = three short, three long, three short).	Service needed.
	No beep heard.	See heading ***Power-On Test***.
Monitor	Blank screen, one beep.	See heading ***Checking Voltage Selector Switch, Fuse and Connectors***.

	`Current date is`
	`Tue 1-01-1980`
	is displayed
		If you have entered time and date earlier, check the DOS version. Always use 2.11D or later versions.

Error message	POWER ON TEST XXXXXXXXXX ERROR XXX kB ok PRESS F1 KEY (plus two beeps)	See heading ***Power-On Test Errors***.
Printer (BUILT-IN)	ALARM indicator lit.	Check paper. Lit if paper is not loaded. Check ribbon (if used). Lit if ribbon end is reached. If fault remains, see heading ***Printer***.
	The printer cannot be placed on-line. The ALARM indicator is unlit.	Check that the BUILT-IN/EXTERNAL switch is in the BUILT-IN position. If fault remains, see heading ***Printer***.

Problems When Loading a Diskette

Problem Area	**Observations**	**Action**
DOS or application program diskettes	`Waiting...` is displayed and nothing happens on the screen when you press a key.	1. Use a diskette containing DOS.
	Nothing happens.	2. Check the diskette in drive A. Make sure it is the DOS/application diskette. 3. Check that the diskette is properly inserted. 4. Check that the door is closed. 5. Try using the backup diskette.
	Error message.	See heading ***Error Messages***.
Other diskettes during DOS or application session	Nothing happens.	1. Is it the right diskette? Check diskette label. 2. Check that diskette is properly inserted. 3. Check that door is closed. 4. Try using the backup copy.
	Error message.	See application program manual or heading ***Error Messages***.

Problems With the Keyboard

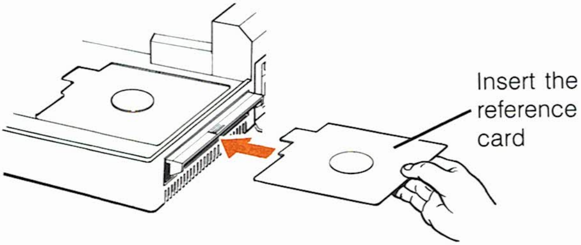
Problem Area	**Observations**	**Action**
Nothing happens on screen when you press keys	Suspect program error.	1. Try **Ctrl-Break**. 2. Try **Ctrl-Alt-Del**. 3. Power off and try again. Check that you are using the right DOS version (2.11D or later). If problem remains, service is needed.
Screen shows wrong characters	Some keys produce wrong characters or some keys produce no characters.	Insert original DOS diskette and restart DOS. If problem remains, service is needed.

Service

When you must have the PC serviced, call your local dealer and report the problem, or send the PC to your service representative. Refer to your service agreement for information.

Transport

Preparing the PC for transport is described in the chapter entitled ***Getting Started***. Don't forget to insert the ***Reference Card*** or protective cardboard in the diskette drive before you close the door. ***Handle the computer with care***.



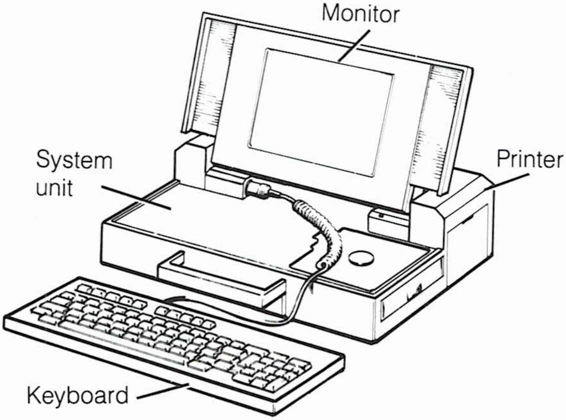
Note: *Always use the original box and packing material when shipping your PC. Otherwise, the hardware guarantee might not be valid.*

Troubleshooting

The step-by-step procedures in this section will help you determine what you must do to bring your PC on-line again.

The troubleshooting procedures help you solve a problem in any of the four major units of your computer. These units are:

- System unit
- Monitor
- Keyboard
- Built-in printer

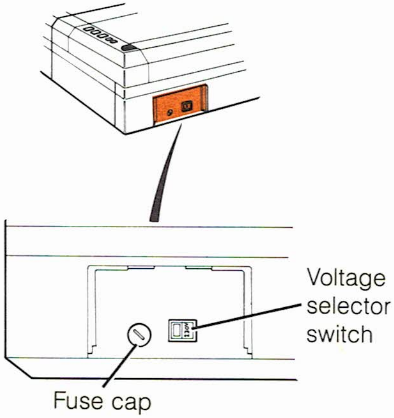


Checking the Voltage Selector Switch, Fuse and Connectors

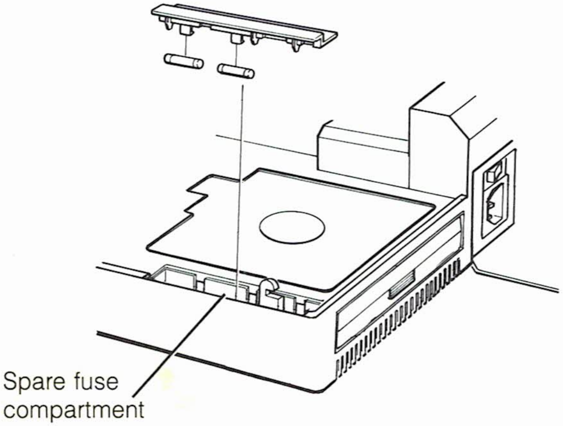
If nothing happens when you turn the PC on, follow these instructions.

1. Turn the PC off.
2. Unplug the power cables from the wall outlet.
3. Turn all externally attached devices off (external printer, diskette drive, modem and so on) and disconnect them from the computer.

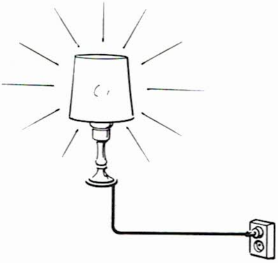
4. Open the fuse cover and check that the voltage selector switch is on the right setting. If the selector is set higher than the voltage in the wall outlet, the power-on indicator does not light when powering-on. If the setting is lower than the voltage in the outlet, the fuse blows.


Voltage selector switch
Fuse cap

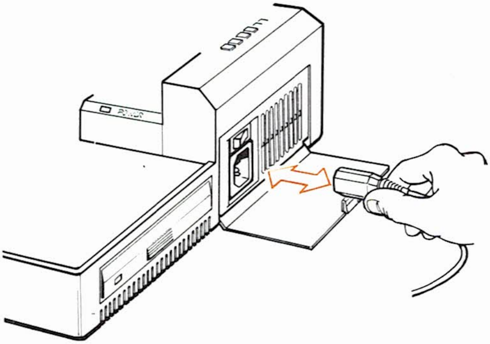
5. Unscrew the fuse cap by turning it counterclockwise. Remove the fuse and check that the filament and the glass cover are in order. If not, discard the fuse and replace it with one from the spare fuse compartment.


Spare fuse compartment

6. Check the wall outlet by plugging in an ordinary lamp.



7. Disconnect and reconnect the power cable to ensure proper electrical connection.



8. Plug the power cable into a wall outlet.
9. Turn the PC on.
10. If still nothing happens, have the PC serviced.

Power-On Test

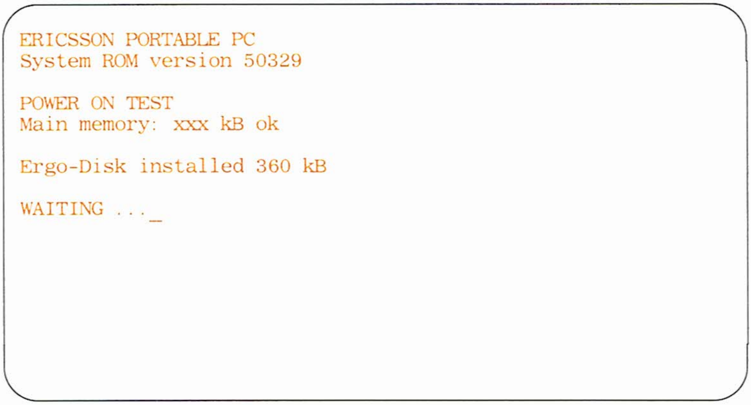
1. Remove diskette(s) from the diskette drive(s).
2. Turn the PC off.
3. Turn all externally attached devices off (external printer diskette drive, modem, and so on).

4. Disconnect all external devices except the keyboard from the system unit.

Note: *The keyboard must be connected to the system unit.*

---

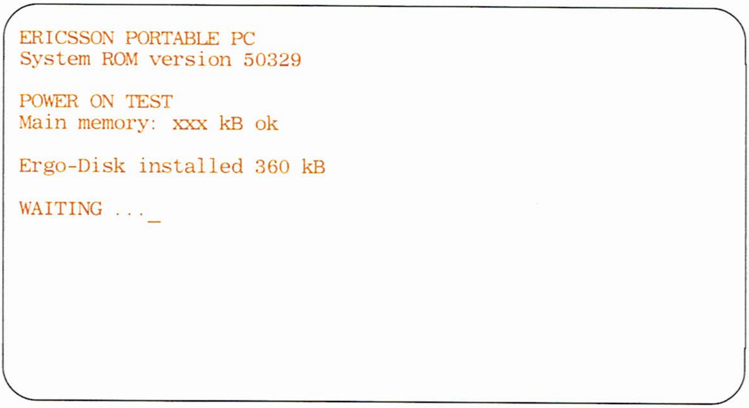
5. Turn the brightness knob on the monitor fully counterclockwise to increase screen brightness.
6. Turn the PC on.
7. If everything is OK, you hear *one* short beep, and the following message appears on the screen when the power-on test is complete.



```
ERICSSON PORTABLE PC
System ROM version 50329

POWER ON TEST
Main memory: xxx kB ok

Ergo-Disk installed 360 kB

WAITING ..._
```

8. The letters xxx in the example stand for the amount of memory installed in the PC. If your PC is a standard system, xxx is equal to 256 kB. If this number is incorrect, refer to the following section, ***Memory Size Error***.
9. If the above message does not appear, refer to ***Power-On Test Errors*** for further instructions.

Memory Size Error



```
ERICSSON PORTABLE PC
System ROM version 50329

POWER ON TEST
Main memory: xxx kB ok

Ergo-Disk installed 360 kB

WAITING ..._
```

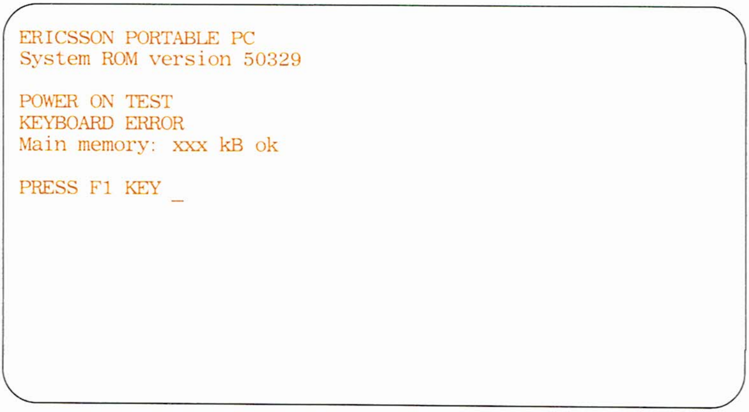
COMMENTS: The number showing the amount of memory is wrong. You hear one short beep.

ACTION: Have the PC serviced.

Power-On Test Errors

Note: *The power-on test error messages include the text* PRESS F1 KEY. *Pressing the function key* **F1** *allows you to bypass the error condition, but does not correct it. You must still take steps to correct the error.*

Keyboard Error

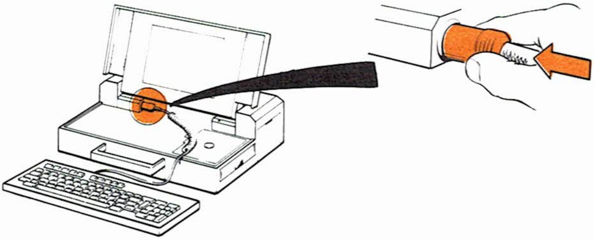


```
ERICSSON PORTABLE PC
System ROM version 50329

POWER ON TEST
KEYBOARD ERROR
Main memory: xxx kB ok

PRESS F1 KEY _
```

COMMENTS: You hear two short beeps.

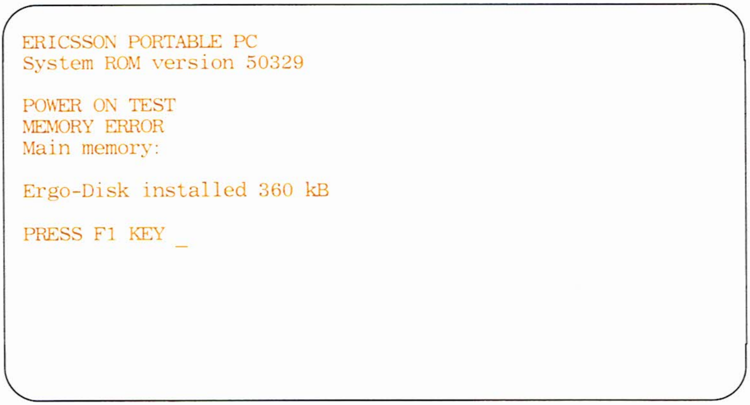
ACTION:

1. Turn the PC off.
2. Make sure the keyboard cable is properly connected to the PC.



3. Run the *power-on* test again by turning the PC on.
4. If the error persists, have the PC serviced.

Memory Error

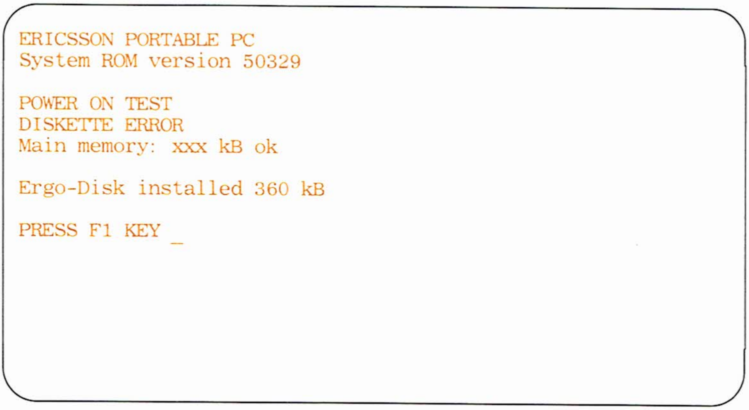


```
ERICSSON PORTABLE PC
System ROM version 50329

POWER ON TEST
MEMORY ERROR
Main memory:

Ergo-Disk installed 360 kB

PRESS F1 KEY _
```

COMMENTS: You hear two short beeps.

ACTION: Have the PC serviced.

Diskette Error

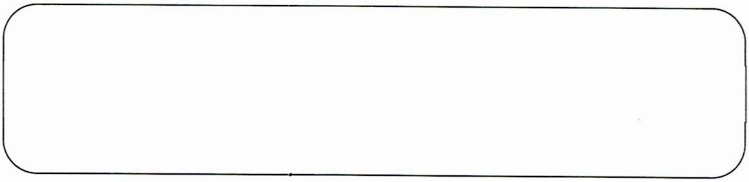


```
ERICSSON PORTABLE PC
System ROM version 50329

POWER ON TEST
DISKETTE ERROR
Main memory: xxx kB ok

Ergo-Disk installed 360 kB

PRESS F1 KEY _
```

COMMENTS: You hear two short beeps.

ACTION: Try a back up copy of the DOS diskette.

Monitor error



COMMENTS: The screen is blank. You hear one short beep.

ACTION:

1. Turn the brightness knob to increase screen brightness.
2. If the power-on test message isn't displayed, turn the PC off.
3. Run the power-on test by turning the PC on.
4. If the same error occurs, have the PC serviced.

System Unit Error

COMMENTS: The screen is blank. You hear an SOS alarm signal (three short beeps, three long beeps, three short beeps).

ACTION: Turn the PC off and have it serviced.

Printer

This section contains information to help you correct problems with your optional built-in printer.

Problem Definition Chart

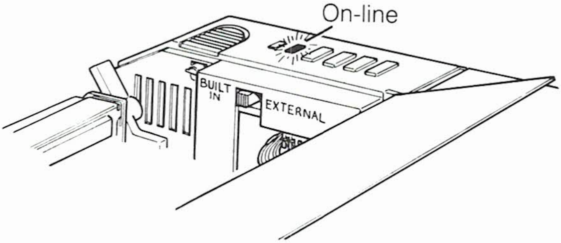
Problem	**Action**
No printing	Check that the BUILT-IN/EXTERNAL switch is in the BUILT-IN position. Run the printer self-test. If the self-test works improperly, service is needed.
Incorrect printout	Run the printer self-test. If the printout during the self-test is incorrect, service is needed.
ALARM indicator is lit	One of the following has occured: a) You have reached paper end; load new paper. b) You have reached ribbon end; load new ribbon cartridge. c) The printer is malfunctioning; service is needed.

Printer Self-Test

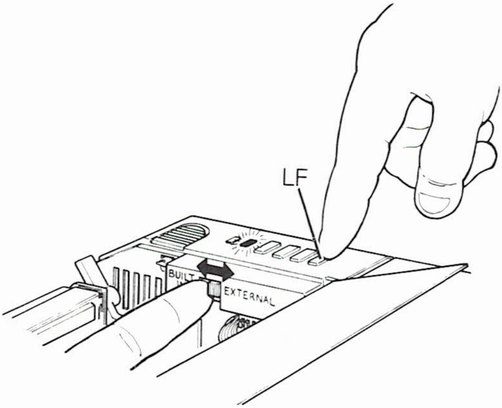
Note: *The printer self-test cannot be performed when the printer is out of paper or the ribbon is at the end (if ribbon is used). Refer to the* ***Operation*** *chapter for paper loading and ribbon installation procedures.*

To run the printer self-test, follow this procedure.

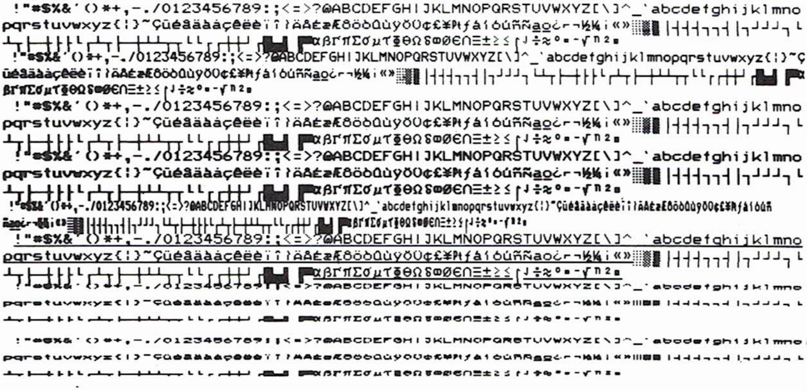
1. Load DOS.
2. Be sure the printer is on-line.



3. Press and hold the line feed (LF) switch.
4. Press the BUILT IN/EXTERNAL switch to the EXTERNAL position, then back to the BUILT IN position. This starts the print test.



5. Allow the printer to print out every character. A sample print test follows.



```
 !"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmno
pqrstuvwxyz{¦}~ÇüéâäàåçêëèïîìÄÅÉæÆôöòûùÿÖÜ¢£¥₧ƒáíóúñÑªº¿⌐¬½¼¡«»░▒▓│┤╡╢╖╕╣║╗╝╜╛┐└
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pqrstuvwxyz{¦}~ÇüéâäàåçêëèïîìÄÅÉæÆôöòûùÿÖÜ¢£¥₧ƒáíóúñÑªº¿⌐¬½¼¡«»░▒▓│┤╡╢╖╕╣║╗╝╜╛┐└
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pqrstuvwxyz{¦}~ÇüéâäàåçêëèïîìÄÅÉæÆôöòûùÿÖÜ¢£¥₧ƒáíóúñÑªº¿⌐¬½¼¡«»░▒▓│┤╡╢╖╕╣║╗╝╜╛┐└
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pqrstuvwxyz{¦}~ÇüéâäàåçêëèïîìÄÅÉæÆôöòûùÿÖÜ¢£¥₧ƒáíóúñÑªº¿⌐¬½¼¡«»░▒▓│┤╡╢╖╕╣║╗╝╜╛┐└
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 !"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmno
pqrstuvwxyz{¦}~ÇüéâäàåçêëèïîìÄÅÉæÆôöòûùÿÖÜ¢£¥₧ƒáíóúñÑªº¿⌐¬½¼¡«»░▒▓│┤╡╢╖╕╣║╗╝╜╛┐└
┴┬├─┼╞╟╚╔╩╦╠═╬╧╨╤╥╙╘╒╓╫╪┘┌█▄▌▐▀αßΓπΣσµτΦΘΩδ∞φε∩≡±≥≤⌠⌡÷≈°∙·√ⁿ²■

 !"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmno
pqrstuvwxyz{¦}~ÇüéâäàåçêëèïîìÄÅÉæÆôöòûùÿÖÜ¢£¥₧ƒáíóúñÑªº¿⌐¬½¼¡«»░▒▓│┤╡╢╖╕╣║╗╝╜╛┐└
┴┬├─┼╞╟╚╔╩╦╠═╬╧╨╤╥╙╘╒╓╫╪┘┌█▄▌▐▀αßΓπΣσµτΦΘΩδ∞φε∩≡±≥≤⌠⌡÷≈°∙·√ⁿ²■
```

6. To interrupt the print test, restart DOS by pressing **Ctrl**- **Alt**-**Del**.

Note: *If your print test does not match the one printed above, have the printer serviced.*

DOS Error Messages

This section lists DOS error messages that may occur when starting up DOS, or during your session when using the following DOS commands: CHKDSK, COPY, DEL, DIR, DISKCOPY, DOSGEN, DOSXFER, ERASE, FORMAT, or RENAME.

The messages are listed in alphabetical order. After each message is a brief explanation of why the message occurred, followed by a description of the recommended action to be taken. However, if you want to investigate certain error situations and require further technical information about the cause of a message, see the ***DOS Manual***. ***Appendix H. Document List*** contains information on all available documents.

Special Characters in Command Lines

There are special characters you must be careful about using when you enter commands. These characters are : ; , > < ? * | \ and /. Improper use of these characters results in a variety of error messages, including the following:

```
File creation error
File not found
File name must be specified
Invalid directory
Invalid parameter
No room in directory for file
Syntax error
```

As a general rule, you should quickly scan the last command you entered, if it is followed by an error message, and be sure that these special characters are not misplaced. Correct the command and re-enter it, rather than looking up the error message and carrying out any recommended action. In some cases, the action will be inappropriate.

Device Error Messages

Some messages indicate that an error has been detected when a *device* (disk drive, printer, etc.) or a *device driver* (the program that controls the operation of the device) has attempted to read or write data. When this occurs, DOS displays a message like the following:

```
Not ready error writing device PRN
Abort, Retry, Ignore?
```

or

```
Sector not found error reading drive A:
Abort, Retry, Ignore?
```

Before the word *error* in these messages, there are variations depending on the type of error that occurred (such as *Not ready* or *Sector not found*).

After the word *error* in these messages, there are variations depending on the operation attempted (*reading* or *writing*) and the device type (such as *PRN* for printer or *drive A:*). For this reason, these types of messages are presented in this section as follows:

```
Not ready error ..........
Abort, Retry, Ignore?
```

or

```
Sector not found error ..........
Abort, Retry, Ignore?
```

When you respond to these messages, press **R** to retry the read/write operation, because it may be a temporary error. If the message continues after a couple of retries, press **A** to terminate the command and take the recommended action. We recommend that you do not press **I** for *Ignore* because data is lost when you use this response.

Error Messages

`Are you sure (Y/N)?`

This message is displayed after an ERASE or DEL command when all files are specified using `*.*`. It is also displayed after a FORMAT command if a hard disk is specified.

Action: If you want to delete all files, press **Y**. Otherwise, press **N** and the PC ignores the command.

```
Attempted write-protect violation
Format failure
```

```
Insert new diskette for drive x:
and strike any key when ready
```

Write-protected diskettes cannot be formatted.

Action: Remove the diskette. Check to be sure that the diskette was inserted properly, and check the label to make sure you have the right diskette. If so, remove any write-protect tape, insert the diskette, and press any character key to start formatting. If you do not want to continue with FORMAT, press **Ctrl-Break**.

```
Bad call format error ..........
Abort, Retry, Ignore?
```

The device driver may be incompatible with the device.

Action: Press **R** to retry. If the message occurs again, press **A** to terminate the command. Contact your system programmer or service representative.

```
Bad command error ..........
Abort, Retry, Ignore?
```

The device mentioned in the message has received an invalid command from the device driver.

Action: Press **R** to retry. If the message occurs again, press **A** to terminate the command. Contact your system programmer or service representative.

```
Bad command or file name
```

The command name entered was invalid, or the external command or batch file cannot be found on the disk.

Action: Check the spelling to make sure you are using exactly the right characters (for example, F0RMAT with the letter O and not a zero) and be sure that the drive specification refers to the drive holding the diskette containing the command or batch file. If you find an error, press the **F3** function key and correct it, or retype the command, and press **Enter**. Otherwise, use the DIR command to check whether the file exists on that drive.

`Bad or missing Command Interpreter`

The command interpreter file COMMAND.COM cannot be found, or an error has occurred when loading the file.

Action: Press **Ctrl-Alt-Del** to restart DOS. If the same error occurs, insert a backup copy of the DOS diskette in drive A and press **Ctrl-Alt-Del** to restart DOS.

If the problem occurred on diskette, remove any write-protect tape and insert that diskette into drive B. Enter the command DIR B:COMMAND.COM to check whether the COMMAND.COM file is on the diskette. If not, enter the command COPY COMMAND.COM B: to copy the file. Then transfer the diskette from drive B to drive A, and press **Ctrl-Alt-Del** to restart DOS.

If you have any further problems, contact your system programmer or service representative.

`Bad or missing filename`

An error occurred while DOS was being loaded from disk.

Action: Restart using **Ctrl-Alt-Del**. If the same error occurs, restart your session using a backup copy of the DOS diskette in drive A. Report the error to your system programmer or service representative.

`Bad PRESTART.COM Program`

An error occurred while DOS was being loaded from disk.

Action: Restart using **Ctrl-Alt-Del**. If the same error occurs, restart your session using a backup copy of the DOS diskette in drive A, and copy its PRESTART.COM file to the disk that failed.

`Bad PRESTART.SYS`

An error occurred while DOS was being loaded from disk.

Action: Restart using **Ctrl-Alt-Del**. If the same error occurs, restart your session using a backup copy of a DOS diskette in drive A, and copy its PRESTART.SYS file to the disk that failed.

```
Bad unit error .........
Abort, Retry, Ignore?
```

The device driver may be incompatible with the device.

Action: Enter **R** to retry. If the message occurs again, enter **A** to terminate the command. Contact your system programmer or service representative.

`Boot failure`

An error occurred when loading DOS into memory.

Action: Restart DOS using **Ctrl-Alt-Del**. If the error occurs again, insert a backup copy of the DOS diskette in drive A and press **Ctrl-Alt-Del** to restart DOS. Report the error to your system programmer or service representative.

`Cannot do binary reads from a device`

The /B switch may not be specifed when copying from this device.

Action: Omit the /B switch from the COPY command after the device name.

`Cannot load COMMAND, system halted`

The command interpreter file COMMAND.COM cannot be loaded by DOS.

Action: Press **Ctrl-Alt-Del** to restart DOS. If the same error occurs, contact your system programmer or service representative.

`Cannot start COMMAND, exiting`

A second copy of the command interpreter file COMMAND.COM cannot be loaded by DOS.

Action: If necessary, press **Ctrl-Alt-Del** to restart DOS. If you have further problems, contact your system programmer or service representative.

`Content of destination lost before copy`

During a COPY command used for concatenating files, one of the source filenames has been found to be the same as the target filename. This results in no copying.

Action: Repeat the COPY command using a different target filename. Or, repeat the command omitting the target filename and specifying the target filename as the first filename in the source file list.

`Copy not completed`

DISKCOPY was terminated before completion.

Action: Reenter DISKCOPY or reformat the diskette before continuing your session.

```
data error ..........
Abort, Retry, Ignore?
```

The specified device was unable to read or write data correctly. This usually indicates a defective data area on the disk.

Action: Press **R** to retry. If the message occurs again, press **A** to terminate the command and use your backup copy.

`Disk error ..........`
`Abort, Retry, Ignore?`

An error occurred on the specified disk.

Action: Press **R** to retry. If the message occurs again, press **A** to terminate the command and use your backup copy.

`Disk unsuitable for system disk`

There is a defective track on the disk in the area reserved for DOS system files. Therefore, the disk can only be used for data; programs cannot be stored.

Action: Remove the diskette and write "For data only" on the label. Then insert a new diskette and reenter FORMAT.

`Duplicate filename or File not found`

The new name of the file to be renamed is already assigned to an existing file, or the file to be renamed cannot be found on the the disk.

Action: Check the file specification of the source file. If it appears to be correct, use DIR to verify that the file exists. Then check the filename of the target file to determine whether a duplicate filename exists (particularly if you used wildcard characters in your file specification).

`Error in .EXE file`

An error has been detected in a program file.

Action: Contact your system programmer or service representative.

`Error writing to device`

All data was not completely written because the device received more data than expected.

Action: Contact your system programmer or service representative.

EXEC failure

An error occurred while processing the command or reading it from the disk.

Action: Press **F3**, correct the command, if necessary, and press **Enter**. If the same error occurs, contact your system programmer or service representative.

File allocation table bad, drive x
Abort, Retry, Ignore

An indeterminate error has occurred when reading from the disk in the specified drive.

Action: Press **R** to retry. If the message occurs again, press **A** to terminate the command use your backup copy. Report the error to your system programmer or service representative.

File cannot be copied onto itself

A COPY command has been entered designating a file specification for the copy that is identical to that of the original file.

Action: Reenter the COPY command using a different file specification for the copy. You can specify another disk and/or directory to hold the copy, or simply change the filename.

File creation error

The directory was full when a new filename was being added, or an attempt was made to replace a file marked as read-only.

Action: Check the command for incorrect use of special symbols (such as > or ∗). If you were adding a new file, use the CHKDSK command to determine whether the directory is full, or some other condition caused the error.

`File not found`

The filename specified in the command was not found in the directory of that disk.

Action: Check the spelling of the filename, and the assigned drive. Use the DIR command to see whether the filename is present on the diskette.

`Format failure`

The diskette being formatted is regarded as unusable.

Action: Destroy the diskette, and format a new one.

`Incorrect DOS version`

The command just entered requires a different version of DOS than the one currently being used.

Action: Use a later version of the DOS diskette. If unavailable, contact your system programmer or service representative.

`Insert COMMAND.COM disk in drive x: and strike any key when ready`

DOS cannot find the command interpreter COMMAND.COM file on the disk in the specified drive.

Action: Make sure that the DOS diskette is inserted in the appropriate drive and the door is closed, then press any character key. If the message continues to appear, restart DOS using **Ctrl-Alt-Del**.

`Insert disk with batch file and strike any key when ready`

The diskette containing the batch file being processed was removed before all the commands were executed completely.

Action: Insert the diskette with the batch file into the appropriate drive, and press any character key to continue processing the batch file commands.

Insert DOS disk in drive x: and strike any key when ready

The FORMAT or SYS program cannot find the DOS files it is attempting to load from the diskette in drive *x*.

Action: Insert the DOS diskette and press any character key to continue.

Insufficient disk space

The file being written is larger than the available free space on the disk.

Action: Use the CHKDSK command to determine the status of the diskette. Erase any unwanted files from the current diskette, or insert a new diskette to continue.

Insufficient memory

There is insufficient free memory available for the command to be executed.

Action: Press **Ctrl-Alt-Del** to restart DOS. If the message is repeated when you repeat the command, contact your system programmer or service representative.

Invalid characters in volume label

One or more characters in the name you specified for the volume label are not permitted.

Action: The special characters : ; . < > ? | \ / are invalid for use in a volume label and must be omitted or replaced.

Invalid COMMAND.COM in drive x

DOS attempted to load an incorrect version of the command interpreter COMMAND.COM from the diskette in the specified drive.

Action: Insert the DOS diskette containing the correct version of the command interpreter into the drive, and press any character key to continue.

Invalid country code

When starting DOS, an invalid code was used in a COUNTRY=nn command in the CONFIG.SYS file. DOS is loaded with the US version.

Action: Contact your system programmer or service representative.

Invalid date
Enter new date

Depending on the national character set contained on your DOS diskette, the order of year (*yy*), month (*mm*), and day (*dd*) in the date format could be *yy-mm-dd*, *mm-dd-yy*, or *dd-mm-yy*.

Action: Enter only the date, not the day of the week (Mon, Tue, and so on). The *yy* parameter may be 80 to 99 (use 4 digits for the years 2000 to 2099), *mm* may be 1 to 12, and *dd* may be 1 to 31, depending on the month entered. Instead of a hyphen (-) you may use a slash (/) as a delimeter. If you don't want to enter a new date, just press **Enter**.

Invalid directory

The directory (or one of the directories) does not exist in the specified path.

Action: Check your command for incorrect use of the backslash character (\) or incorrect spelling of a directory name. If the command appears to be correct, use the TREE¦MORE command to display the directory paths (pressing Enter each time you want to see the next screen), or if you have a printer, use TREE>PRN to make a hard copy of the directory structure. Then reenter your command with the correct path specification.

Invalid drive in search path

DOS attempted to locate a command or batch file using a previously defined search path, but found an invalid drive specification.

Action: Enter PATH to display the current search path, and reenter the drive specification correctly.

`Invalid drive specification`

The command just entered contains an invalid drive specification.

Action: Reenter the command with the correct drive specification.

`Invalid number of parameters`

Too few or too many parameters have been specified after the command keyword.

Action: Press the **F3** function key and correct the command (or retype the command correctly), then press **Enter**. If you are unsure about what parameters may be entered, see ***Appendix G. DOS Quick Reference*** for further information.

`Invalid parameter`

One of the parameters has been specified incorrectly.

Action: Press the **F3** function key and correct the command (or retype the command correctly), then press **Enter**. If you are unsure about what parameters may be entered, see ***Appendix G. DOS Quick Reference*** for further information.

```
Invalid time
Enter new time
```

The time has been entered incorrectly.

Action: The PC uses a 24-hour clock. Enter the correct time, separating the hours and minutes with a colon (:). For example, 8:04 is a valid entry.

```
Memory allocation error
Cannot load COMMAND, system halted
```

The area in which DOS keeps track of available memory has been overwritten by a program.

Action: Press **Ctrl**-**Alt**-**Del** to restart DOS.

```
No paper error ..........
Abort, Retry, Ignore?
```

The specified printer is either out of paper or off-line (or not turned on if it is an external printer).

Action: Set the printer on-line or load new paper (turn it on if it is an external printer). See the chapter entitled ***Operation*** for paper loading instructions.

```
Non-DOS disk error .........
Abort, Retry, Ignore?
```

The file allocation table contains invalid data. The specified disk is incompatible with DOS and requires re-formatting.

Action: Press **A** to terminate the command. Contact your system programmer or service representative.

```
Non-system disk or disk error
Replace and strike any key when ready
```

DOS system files are missing from the disk directory or a disk read error has occurred during system startup.

Action: Check that your DOS diskette is inserted in drive A, then press any character key to restart DOS.

```
Not ready error .........
Abort, Retry, Ignore?
```

The specified device is not ready for operation.

Action: Check that the door is properly closed. If the device is the internal printer, set it on-line; if it is an external printer, check that it is turned on. Press **R** to retry. If the message occurs again, press **A** to terminate the command. Contact your system programmer or service representative.

```
Program too big to fit in memory
```

There is not enough free space in memory to load the external command that was entered.

Action: Press **Ctrl-Alt-Del** to restart DOS. If the message is repeated when you reenter the command, contact your system programmer or service representative.

```
Read fault error reading ..........
Abort, Retry, Ignore?
```

DOS was unable to read data successfully.

Action: Press **R** to retry. If the message occurs again, press **A** to terminate the command. Contact your system programmer or service representative.

```
Sector not found ............
Abort, Retry, Ignore?
```

The required sector cannot be located on the specified disk. This indicates a defective area on the disk.

Action: Press **R** to retry. If the message occurs again, press **A** to terminate the command and use your backup copy.

```
Sector size too large in file FILENAME
```

The device driver named in FILENAME specifies a size of sector larger than that handled by devices previously defined to DOS.

Action: Contact your system programmer or service representative.

```
Seek error ...........
Abort, Retry, Ignore?
```

The required track cannot be located on the specified disk.

Action: Press **R** to retry. If the message occurs again, press **A** to terminate the command and use your backup copy.

```
Syntax error
```

The command line just entered was written incorrectly.

Action: Press the **F3** function key and correct or retype the command, and press **Enter**. Refer to ***Appendix G. DOS Quick Reference*** for information.

```
Terminate batch job (Y/N)?
```

DOS was processing a batch file when you pressed **Ctrl-Break**.

Action: If you want terminate the batch job, press **Y**. Otherwise, press **N** to continue, and DOS resumes the processing with the next command in the batch file. Because the last command may have been terminated before completion, further error messages may appear. In this case, terminate the batch job and rerun it.

`Track 0 bad-disk unusable`

Since track 0 (the first track on the disk) is bad, the disk cannot be used.

Action: Destroy the diskette and format a new one.

`Unable to write BOOT`

The first track of the diskette or DOS partition is defective.

Action: Destroy the diskette and format a new one.

`Unrecognized command in CONFIG.SYS`

An invalid command has been encountered in the configuration file CONFIG.SYS.

Action: DOS ignores the error and continues. You may continue your session. However, report the error to your system programmer or service representative.

```
Write fault error ..........
Abort, Retry, Ignore?
```

DOS was unable to write data successfully to the specified device.

Action: Press **R** to retry. If the message occurs again, press **A** to terminate the command. Try your backup copy of the diskette. Otherwise, contact your system programmer or service representative.

```
Write protect error ..........
Abort, Retry, Ignore?
```

The diskette is write-protected or inserted incorrectly.

Action: Be sure that your command indicated the correct drive. Remove the diskette from the specified drive. Check whether the diskette was inserted properly, and check the label to make sure you have the right diskette. If so, remove any write-protect tape, insert the diskette, and press **R** to continue. If you don't want to continue, press **A**.

Ergo-Disk Error Messages

```
Ergo-Disk not loaded – SWAP is not allowed
```

This message is displayed if you try to execute the DOS command SWAP without having an ***Ergo-Disk*** installed in your system.

Action: Continue your operation according to the description given under the heading ***In a One-Drive System*** in the ***Operation*** chapter.

```
Two disk drives – SWAP is not allowed
```

When an external diskette drive is connected to your system, the DOS command SWAP is disabled.

Action: Continue your operation according to the description given under the heading ***In a Two-Drive System*** in the ***Operation*** chapter.

```
Not Single Mode – SWAP P is not allowed
Not Single Mode – SWAP D is not allowed
```

These messages are displayed if you try to execute SWAP when ***Ergo-Disk*** handling has already been activated.

Action: Start running your application program as intended, or close the swapping session by giving the command SWAP OFF.

`Single Mode – SWAP OFF is not allowed`

This message is given if you try to execute SWAP OFF when ***Ergo-Disk*** handling is not activated.

Action: If you want to use the ***Ergo-Disk***, type SWAP P or SWAP D and start your application program. If not, operate your system as described under the heading ***In a One-Drive System*** in the ***Operation*** chapter.

`Invalid parameter`

Only three parameters are allowed together with the DOS SWAP command. They are P, D and OFF.

Action: Enter a correct parameter with the SWAP command.

The following error messages are associated with the SWAP OFF command.

```
Read error
Retry, Abort?
```

The system cannot read the diskette in the drive.

Action: Press **R** to retry. If the message occurs again, check to be sure that the diskette is properly inserted and the diskette drive door is closed. Press **R** again. If the same message occurs, press **A** and contact your system programmer or service representative.

```
Diskette not recognized
Retry, Abort?
```

The diskette in the drive is not the one with which you started the ***Ergo-Disk*** handling session.

Action: Insert the proper diskette and press **R**.

```
Write protect error
Retry, Abort?
```

The diskette in the drive is write-protected or inserted incorrectly.

Action: Remove any write-protect tape. Check to be sure the diskette is properly inserted in the drive. Press **R** to retry.

```
Write error
Retry, Abort?
```

The diskette cannot be written on.

Action: Press **R** to retry. If the message occurs again, check to be sure that the diskette is properly inserted and the diskette drive door is closed. Press **R** again. If the same message occurs, press **A** and contact your system programmer or service representative.

Options

Store the operating instructions supplied with the optional equipment that you purchase in this part of the manual.

Appendices

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E. Built-in Printer E-1
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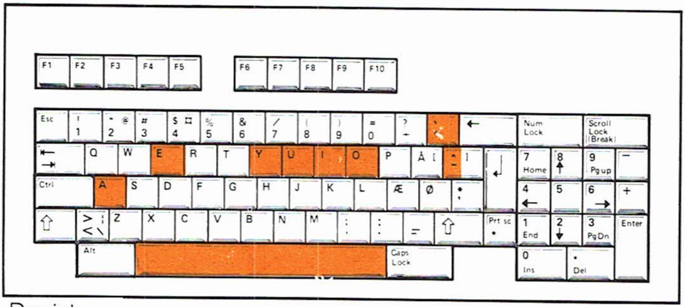
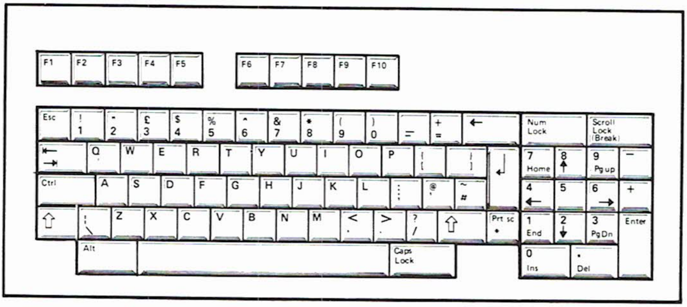
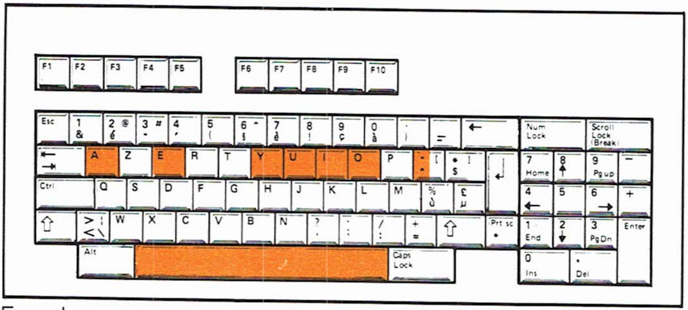
Appendix A. Keyboard Layouts


F1 F2 F3 F4 F5 F6 F7 F8 F9 F10
Esc ! 1 " @ 2 # 3 $ ¤ 4 % 5 & 6 / 7 (8) 9 = 0 ? + ` ´ ←
Q W E R T Y U I O P Å [^]
Ctrl A S D F G H J K L Æ Ø * '
> \ < Z X C V B N M ; , : . _ - Prt sc *
Alt Caps Lock
Num Lock Scroll Lock (Break) 7 Home 8 9 Pg up − 4 5 6 + 1 End 2 3 PgDn Enter 0 Ins . Del

Danish

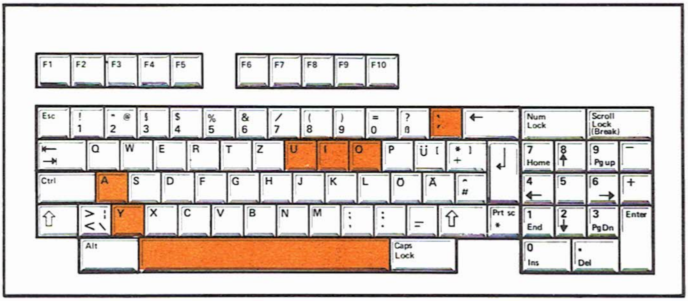

F1 F2 F3 F4 F5 F6 F7 F8 F9 F10
Esc ! 1 " 2 £ 3 $ 4 % 5 ^ 6 & 7 * 8 (9) 0 _ - + = ←
Q W E R T Y U I O P { [}]
Ctrl A S D F G H J K L : ; @ ' ~ #
| \ Z X C V B N M < , > . ? / Prt sc *
Alt Caps Lock
Num Lock Scroll Lock (Break) 7 Home 8 9 Pg up − 4 5 6 + 1 End 2 3 PgDn Enter 0 Ins . Del

British English

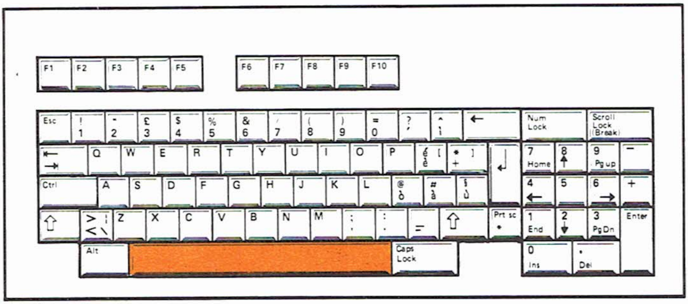

F1 F2 F3 F4 F5 F6 F7 F8 F9 F10
Esc 1 & 2 @ é 3 # " 4 ' 5 (6 ^ § 7 è 8 ! 9 ç 0 à) _ - ←
A Z E R T Y U I O P ^ [*] $
Ctrl Q S D F G H J K L M % ù £ µ
> \ < W X C V B N ? , . ; / : + = Prt sc *
Alt Caps Lock
Num Lock Scroll Lock (Break) 7 Home 8 9 Pg up − 4 5 6 + 1 End 2 3 PgDn Enter 0 Ins . Del

French

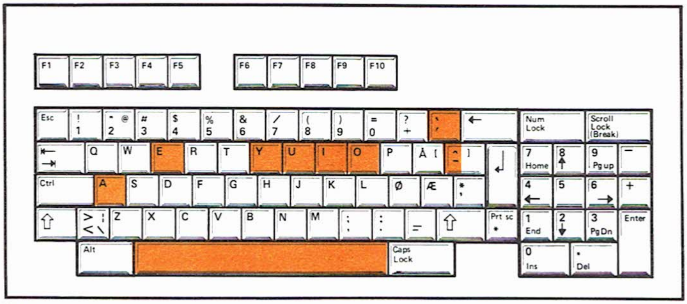
☐ The marked accent keys are dead keys and can be combined with the marked character keys.


F1 F2 F3 F4 F5 F6 F7 F8 F9 F10
Esc ! 1 " @ 2 § 3 $ 4 % 5 & 6 / 7 (8) 9 = 0 ? ß ←
Q W E R T Z U I O P Ü [*] +
Ctrl A S D F G H J K L Ö Ä ^ #
> < \ Y X C V B N M ; , : . _ - Prt sc *
Alt Caps Lock
Num Lock Scroll Lock (Break) 7 Home 8 9 Pg up − 4 5 6 + 1 End 2 3 PgDn Enter 0 Ins . Del

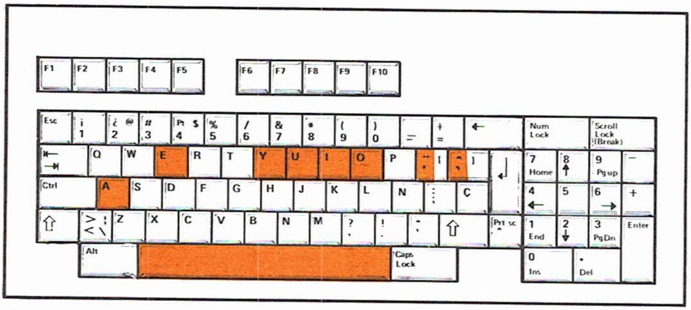
German


F1 F2 F3 F4 F5 F6 F7 F8 F9 F10
Esc ! 1 " 2 £ 3 $ 4 % 5 & 6 / 7 (8) 9 = 0 ? ' ^ ì ←
Q W E R T Y U I O P é è [* +]
Ctrl A S D F G H J K L @ ò # à § ù
> < \ Z X C V B N M ; , : . _ - Prt sc *
Alt Caps Lock
Num Lock Scroll Lock (Break) 7 Home 8 9 Pg up − 4 5 6 + 1 End 2 3 PgDn Enter 0 Ins . Del

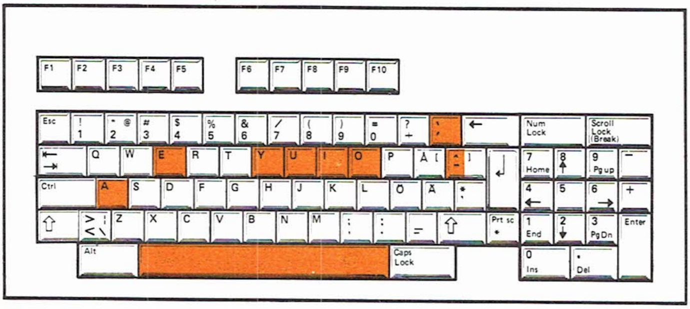
Italian


F1 F2 F3 F4 F5 F6 F7 F8 F9 F10
Esc ! 1 " @ 2 # 3 $ 4 % 5 & 6 / 7 (8) 9 = 0 ? + ←
Q W E R T Y U I O P Å [^]
Ctrl A S D F G H J K L Ø Æ *
> < \ Z X C V B N M ; , : . _ - Prt sc *
Alt Caps Lock
Num Lock Scroll Lock (Break) 7 Home 8 9 Pg up − 4 5 6 + 1 End 2 3 PgDn Enter 0 Ins . Del

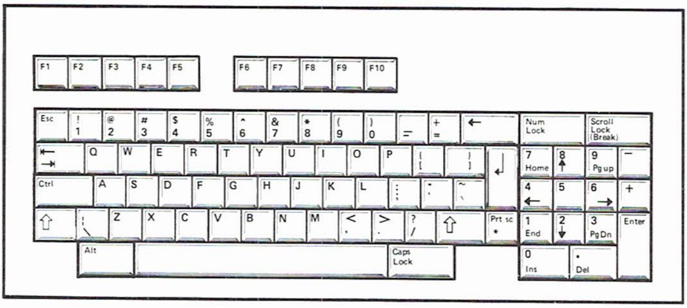
Norwegian


F1 F2 F3 F4 F5 F6 F7 F8 F9 F10
Esc ¡ 1 ¿ @ 2 # 3 Pt $ 4 % 5 / 6 & 7 * 8 (9) 0 = + = ←
Q W E R T Y U I O P Ç]
Ctrl A S D F G H J K L Ñ Ç
⇧ > < Z X C V B N M ? ! ⇧ Prt sc
Alt Caps Lock
Num Lock Scroll Lock (Break) 7 Home 8 9 Pg up − 4 ← 5 6 → + 1 End 2 3 PgDn Enter 0 Ins . Del

Spanish


F1 F2 F3 F4 F5 F6 F7 F8 F9 F10
Esc ! 1 " @ 2 # 3 $ 4 % 5 & 6 / 7 (8) 9 = 0 ? + ←
Q W E R T Y U I O P Å]
Ctrl A S D F G H J K L Ö Ä *
⇧ > < Z X C V B N M ⇧ Prt sc *
Alt Caps Lock
Num Lock Scroll Lock (Break) 7 Home 8 9 Pg up − 4 ← 5 6 → + 1 End 2 3 PgDn Enter 0 Ins . Del

Swedish


F1 F2 F3 F4 F5 F6 F7 F8 F9 F10
Esc ! 1 @ 2 # 3 $ 4 % 5 ^ 6 & 7 * 8 (9) 0 _ − + = ←
Q W E R T Y U I O P { [}]
Ctrl A S D F G H J K L : ; " ' ~ `
⇧ | \ Z X C V B N M < , > . ? / ⇧ Prt sc *
Alt Caps Lock
Num Lock Scroll Lock (Break) 7 Home 8 9 Pg up − 4 ← 5 6 → + 1 End 2 3 PgDn Enter 0 Ins . Del

American English

Appendix B.
Date and Time Entry Formats

The table below shows the date and time formats on the PC.

Keyboard version	Date					
	Month-day-year	Day-month-year	Year-month-day	Separator		
				–	.	/
American	X			X		
Danish			X	X		
English		X			X	
French		X			X	
German		X			X	
Italian		X				X
Norwegian		X			X	
Spanish			X	X		
Swedish			X	X		

The time displayed on the screen is always based on a 24-hour clock, with a colon (:) as separator between hours, minutes, and seconds. However, when you use the DIR command to list filenames, the American and British versions show the time of last file edit on a 12-hour clock, followed by ***a*** (for a.m.) or ***p*** (for p.m.).

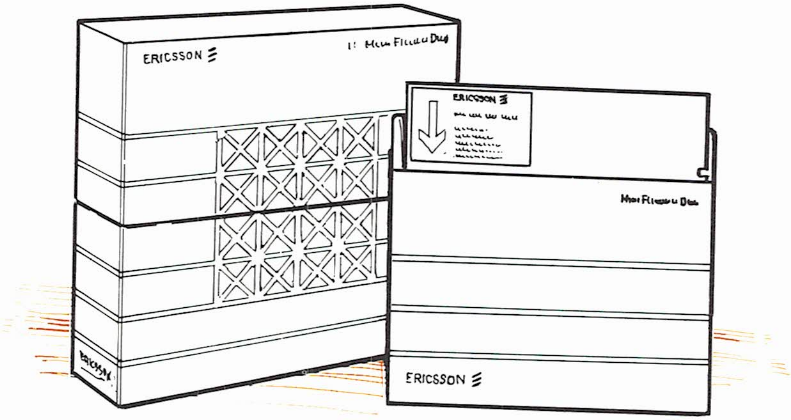
```
A>dir command.com

Volume in drive A has no label
Directory of A:\

COMMAND.COM      16037  6-04-84   11.10a
        1 File(s)      74752 bytes free
A>_
```

Appendix C.
Recommended Diskettes

We recommend using ***Ericsson*** double sided, double density soft-sector diskettes with 40 tracks (48 TPI). These diskettes are specially tested for ***Ericsson*** PC's.


ERICSSON
ERICSSON
ERICSSON
ERICSSON

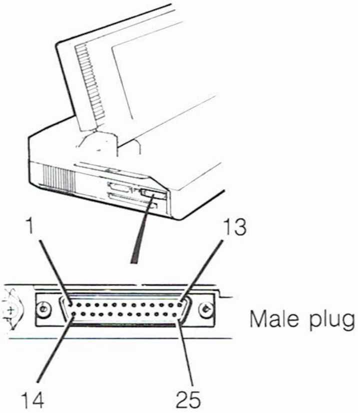
Appendix D. Connectors for External Devices

Your ***Ericsson Portable PC*** has one serial and one parallel interface for communication with external devices.

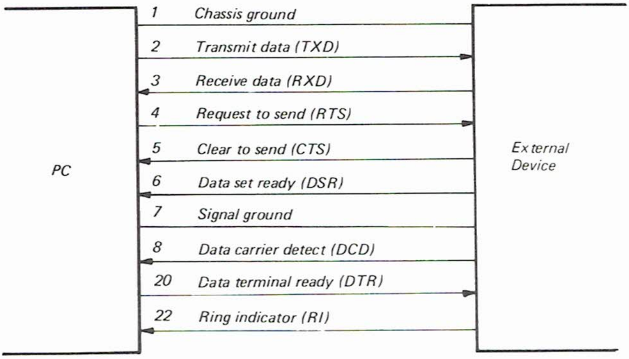
To redirect information between the serial and parallel interfaces, run the MODE command with the applicable parameters. See ***Appendix G. DOS Quick Reference.***

Serial Interface

The serial interface is a standard 25 pin V.24/RS-232C D type connector.



Serial Interface Connector Pin Numbers

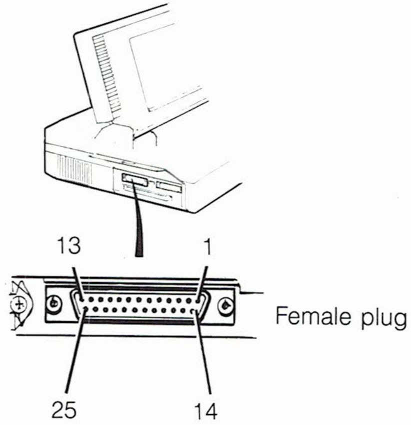


1	Chassis ground
2	Transmit data (TXD)
3	Receive data (RXD)
4	Request to send (RTS)
5	Clear to send (CTS)
6	Data set ready (DSR)
7	Signal ground
8	Data carrier detect (DCD)
20	Data terminal ready (DTR)
22	Ring indicator (RI)

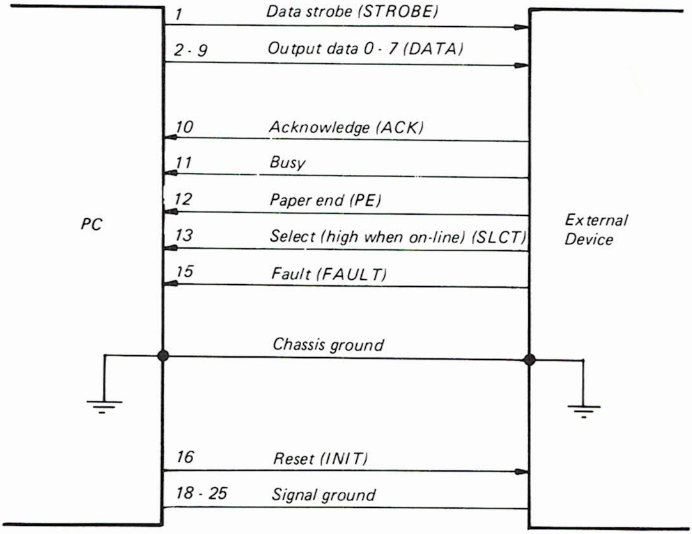
Serial Interface Connector

Parallel Interface

The parallel *Centronics*-type interface is a standard 25 pin D type connector.


13
1
Female plug
25
14

Parallel Interface Connector Pin Numbers


1 Data strobe (STROBE)
2 - 9 Output data 0 - 7 (DATA)
10 Acknowledge (ACK)
11 Busy
12 Paper end (PE)
13 Select (high when on-line) (SLCT)
15 Fault (FAULT)
Chassis ground
16 Reset (INIT)
18 - 25 Signal ground
PC
External Device

Parallel Interface Connector

Appendix E.
Built-in Printer

Recommended Paper and Ribbon

Two types of paper can be used with the printer: plain paper (with ribbon) or thermal paper (without ribbon).

Plain Paper

Paper size	US letter size (8 1/2"x11") A4 letter size (210x297 mm) Maximum width 221 mm.
Order number	6198987949-1

Thermal Paper

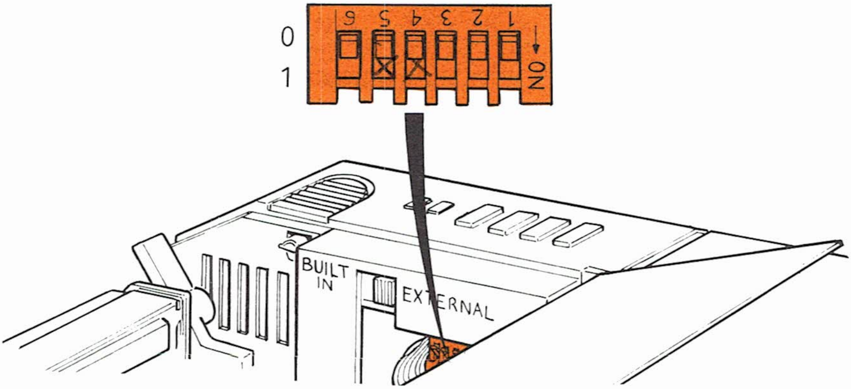
Paper size	US letter size (8 1/2"x11") A4 letter size (210x297 mm) Maximum width 221 mm.
Order number	6198987948-3

Ribbon Cartridge

Type	One-time thermal transfer ribbon with photo-reflector for ribbon end sensor
Specification number	8420-101
Ribbon life	Approx. 60,000 characters
Order number	3049009/8

Printer DIP Switch Setting

Printer functions are defined at power-on by the DIP switches, located at the right side of the printer. The following illustration shows how the switches are set when the printer is delivered from the factory.



This table shows you the possible settings and how the printer responds to them. The settings are explained in detail after the table.

1	2	3	4	5	6	Function
0						CR = line terminator LF = new line
1						CR or LF = new line
	0					6 lines per inch
	1					8 lines per inch
		0				11 inches format length
		1				12 inches format length
			0			Character set 2 International
			[✓ 1]			Character set 2 Norway/Denmark
				0		Density normal
				[✓ 1]		Density + 10%
					0	Density normal
					1	Density − 10%
0	0	0	0	0	0	Factory setting

Switch	Description
SW 1	New line effector. When the switch is set to 0, the LF code causes a new line and the CR code acts only as a line terminator. When the switch is set to 1, either CR or LF creates a new line.
SW 2	Line spacing. This switch determines the number of lines per inch. Setting it to 0 selects 6 lines/in. Setting it to 1 selects 8 lines/in.
SW 3	Format length. The user may select one of two format lengths (form feed sizes). Setting the switch to 0 selects 11-inch format length; setting it to 1 selects 12-inch length.
SW 4	Two different versions of character set 2 can be chosen. When the switch is set to 0, version 1 is chosen (International); when set to 1, version 2 is chosen (Norway/Denmark). Character set 1 can be chosen by using printer control codes.
SW 5,6	The print density (character blackness) can be changed. When switch 5 is set to 1, density is increased 10 % and when switch 6 is set to 1 the density is decreased 10 %.

Printer Control Codes

SELECT COMMANDS

COMMAND	HEX CODE
SELECT LINE SPACING 1/8"	1B 30
SELECT LINE SPACING 7/72"	1B 31
INVOKE SET LINE FEED	1B 32
NULL	00

SET COMMANDS

COMMAND	HEX CODE
SET LINE FEED TO n/72"	1B 41 n
SET LINE FEED TO n/216"	1B 33 n
SET FORMAT LENGTH (LINES PER PAGE = n)	1B 43 n
SET FORMAT LENGTH (INCHES PER PAGE = n)	1B 43 0 n
SET HORIZONTAL TABS	1B 44 n_1 n_2...n_k 00
SET SKIP ZONE	1B 4E n
CANCEL SKIP ZONE	1B 4F
IGNORE PAPER END	1B 38
SET PAPER END	1B 39
CLEAR PRINTER BUFFER	18

FONT SELECTION COMMANDS

COMMAND	HEX CODE
SELECT CHARACTER SET 1	1B 37
SELECT CHARACTER SET 2	1B 36
SELECT NORMAL FONT	12
SELECT COMPRESSED FONT	0F
START SUBSCRIPT	1B 53 01
START SUPERSCRIPT	1B 53 00
STOP SUB/SUPERSCRIPT	1B 54
PICA PITCH	1B 50
ELITE PITCH	1B 4D

SUB MODE COMMANDS

COMMAND	HEX CODE
START UNDERLINE	1B 2D 01
STOP UNDERLINE	1B 2D 00
START ENLARGED ONE LINE	0E
STOP ENLARGED ONE LINE	14
START ENLARGED	1B 57 01
STOP ENLARGED	1B 57 00
START BOLD	1B 45
STOP BOLD	1B 46
START VERTICAL BOLD (2-PASS)	1B 47
STOP VERTICAL BOLD	1B 48

ORDER COMMANDS

COMMAND	HEX CODE
DO HORIZONTAL TAB	09
DO LINE FEED n/216"	1B 4A n
RETURN PRINT HEAD TO LEFT MARGIN	1B 3C
FORM FEED	0C
CARRIAGE RETURN	0D
LINE FEED	0A
VERTICAL TAB (= Line feed)	0B

PIN GRAPHICS COMMANDS

FUNCTION	PRINT SPEED	HEX CODE
480 bit image graphics mode	Normal	1B 4B n_1 n_2
960 bit image graphics mode	Half	1B 4C n_1 n_2
960 bit image graphics mode	Normal	1B 59 n_1 n_2
1920 bit image graphics mode	Half	1B 5A n_1 n_2

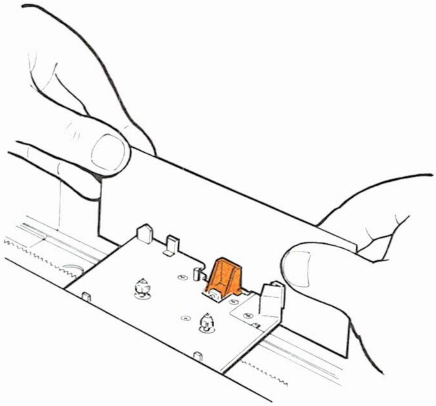
Cleaning

It is important that you keep the parts of your printer clean. This section describes cleaning the print head and the platen.

Cleaning the Print Head

If your printout is unclear or smeared, clean the print head using this procedure.

1. Remove the ribbon cassette if one is installed.
2. Slide a clean, lint-free cloth or tissue moistened with rubbing alcohol between the print head and the platen.
3. Gently press the print head against the platen, as shown in the figure, and wipe the print head with the cloth or tissue.



Cleaning the Platen

To help keep your printout clear, clean the platen using this procedure.

1. Remove the ribbon cassette if one is installed.
2. Wipe the platen with a dry, lint-free, clean cloth or tissue.

Caution: *Do not use organic solvents (turpentine, alcohol, etc.) on the platen. These will dissolve the plastic of the platen.*

Printer Character Sets

	0	1	2	3	4	5	6	7
0	NUL 0	1	2	3	4	5	6	7
1	16	17	DC2 18	19	DC4 20	21	22	23
2	SP 32	! 33	" 34	# 35	$ 36	% 37	& 38	´ 39
3	0 48	1 49	2 50	3 51	4 52	5 53	6 54	7 55
4	@ 64	A 65	B 66	C 67	D 68	E 69	F 70	G 71
5	P 80	Q 81	R 82	S 83	T 84	U 85	V 86	W 87
6	` 96	a 97	b 98	c 99	d 100	e 101	f 102	g 103
7	p 112	q 113	r 114	s 115	t 116	u 117	v 118	w 119
8	NUL 128	129	130	131	132	133	134	BEL 135
9	144	145	DC2 146	147	DC4 148	149	150	151
A	á 160	í 161	ó 162	ú 163	ñ 164	Ñ 165	ª 166	º 167
B	░ 176	▒ 177	▓ 178	│ 179	┤ 180	╡ 181	╢ 182	╖ 183
C	└ 192	┴ 193	┬ 194	├ 195	─ 196	┼ 197	╞ 198	╟ 199
D	╨ 208	╤ 209	╥ 210	╙ 211	╘ 212	╒ 213	╓ 214	╫ 215
E	α 224	β 225	Γ 226	π 227	Σ 228	σ 229	μ 230	τ 231
F	≡ 240	± 241	≥ 242	≤ 243	⌠ 244	⌡ 245	÷ 246	≈ 247

Printer Character Set 1

	8	9	A	B	C	D	E	F
0	 8	HT 9	LF 10	VT 11	FF 12	CR 13	SO 14	SI 15
1	CAN 24	 25	 26	ESC 27	 28	 29	 30	 31
2	(40	) 41	* 42	+ 43	, 44	- 45	. 46	/ 47
3	8 56	9 57	: 58	; 59	< 60	= 61	> 62	? 63
4	H 72	I 73	J 74	K 75	L 76	M 77	N 78	O 79
5	X 88	Y 89	Z 90	[91	\ 92	] 93	^ 94	_ 95
6	h 104	i 105	j 106	k 107	l 108	m 109	n 110	o 111
7	x 120	y 121	z 122	{ 123	¦ 124	} 125	~ 126	 127
8	 136	HT 137	LF 138	VT 139	FF 140	CR 141	SO 142	SI 143
9	CAN 152	 153	 154	ESC 155	 156	 157	 158	 159
A	¿ 168	⌐ 169	¬ 170	½ 171	¼ 172	¡ 173	« 174	» 175
B	╕ 184	╣ 185	║ 186	╗ 187	╝ 188	╜ 189	╛ 190	┐ 191
C	╚ 200	╔ 201	╩ 202	╦ 203	╠ 204	═ 205	╬ 206	╧ 207
D	╪ 216	┘ 217	┌ 218	█ 219	▄ 220	▌ 221	▐ 222	▀ 223
E	Φ 232	Θ 233	Ω 234	δ 235	∞ 236	∅ 237	∈ 238	∩ 239
F	° 248	■ 249	– 250	√ 251	ⁿ 252	² 253	■ 254	 255

Printer Character Set 1

	0	1	2	3	4	5	6	7
0	NUL 0	1	2	♥ 3	♦ 4	♣ 5	♠ 6	7
1	16	17	DC2 18	19	DC4 20	§ 21	22	23
2	SP 32	! 33	" 34	# 35	$ 36	% 37	& 38	´ 39
3	0 48	1 49	2 50	3 51	4 52	5 53	6 54	7 55
4	@ 64	A 65	B 66	C 67	D 68	E 69	F 70	G 71
5	P 80	Q 81	R 82	S 83	T 84	U 85	V 86	W 87
6	` 96	a 97	b 98	c 99	d 100	e 101	f 102	g 103
7	p 112	q 113	r 114	s 115	t 116	u 117	v 118	w 119
8	Ç 128	ü 129	é 130	â 131	ä 132	à 133	å 134	ç 135
9	É 144	æ 145	Æ 146	ô 147	ö 148	ò 149	û 150	ù 151
A	á 160	í 161	ó 162	ú 163	ñ 164	Ñ 165	ª 166	º 167
B	░ 176	▒ 177	▓ 178	│ 179	┤ 180	╡ 181	╢ 182	╖ 183
C	└ 192	┴ 193	┬ 194	├ 195	─ 196	┼ 197	╞ 198	╟ 199
D	╨ 208	╤ 209	╥ 210	╙ 211	╘ 212	╒ 213	╓ 214	╫ 215
E	α 224	β 225	Γ 226	π 227	Σ 228	σ 229	μ 230	τ 231
F	≡ 240	± 241	≥ 242	≤ 243	⌠ 244	⌡ 245	÷ 246	≈ 247

Printer Character Set 2 (International)

	8	9	A	B	C	D	E	F
0	 8	HT 9	LF 10	VT 11	FF 12	CR 13	SO 14	SI 15
1	CAN 24	 25	 26	ESC 27	 28	 29	 30	 31
2	(40	) 41	* 42	+ 43	, 44	— 45	. 46	/ 47
3	8 56	9 57	: 58	; 59	< 60	= 61	> 62	? 63
4	H 72	I 73	J 74	K 75	L 76	M 77	N 78	O 79
5	X 88	Y 89	Z 90	[91	\ 92	] 93	^ 94	_ 95
6	h 104	i 105	j 106	k 107	l 108	m 109	n 110	o 111
7	x 120	y 121	z 122	{ 123	¦ 124	} 125	~ 126	 127
8	ê 136	ë 137	è 138	ï 139	î 140	ì 141	Ä 142	Å 143
9	ÿ 152	Ö 153	Ü 154	¢ 155	£ 156	¥ 157	₧ 158	ƒ 159
A	¿ 168	⌐ 169	¬ 170	½ 171	¼ 172	¡ 173	« 174	» 175
B	╕ 184	╣ 185	║ 186	╗ 187	╝ 188	╜ 189	╛ 190	┐ 191
C	╚ 200	╔ 201	╩ 202	╦ 203	╠ 204	═ 205	╬ 206	╧ 207
D	╪ 216	┘ 217	┌ 218	█ 219	▄ 220	▌ 221	▐ 222	▀ 223
E	Φ 232	Θ 233	Ω 234	δ 235	∞ 236	ø 237	ε 238	∩ 239
F	° 248	▪ 249	- 250	√ 251	ⁿ 252	² 253	■ 254	 255

Printer Character Set 2 (International)

	0	1	2	3	4	5	6	7
0	NUL 0	1	2	♥ 3	♦ 4	♣ 5	♠ 6	7
1	16	17	DC2 18	19	DC4 20	§ 21	22	23
2	SP 32	! 33	" 34	# 35	$ 36	% 37	& 38	´ 39
3	0 48	1 49	2 50	3 51	4 52	5 53	6 54	7 55
4	@ 64	A 65	B 66	C 67	D 68	E 69	F 70	G 71
5	P 80	Q 81	R 82	S 83	T 84	U 85	V 86	W 87
6	` 96	a 97	b 98	c 99	d 100	e 101	f 102	g 103
7	p 112	q 113	r 114	s 115	t 116	u 117	v 118	w 119
8	Ç 128	ü 129	é 130	â 131	ä 132	à 133	å 134	ç 135
9	É 144	æ 145	Æ 146	ô 147	ö 148	ò 149	û 150	ù 151
A	á 160	í 161	ó 162	ú 163	ñ 164	Ñ 165	õ 166	Õ 167
B	░ 176	▒ 177	▓ 178	│ 179	┤ 180	╡ 181	╢ 182	╖ 183
C	└ 192	┴ 193	┬ 194	├ 195	─ 196	┼ 197	╞ 198	╟ 199
D	╨ 208	╤ 209	╥ 210	╙ 211	╘ 212	╒ 213	╓ 214	╫ 215
E	α 224	β 225	Γ 226	π 227	Σ 228	σ 229	µ 230	τ 231
F	≡ 240	± 241	≥ 242	≤ 243	⌠ 244	⌡ 245	÷ 246	≈ 247

Printer Character Set 2 (Norway/Denmark)

	8	9	A	B	C	D	E	F
0	 8	HT 9	LF 10	VT 11	FF 12	CR 13	SO 14	SI 15
1	CAN 24	 25	 26	ESC 27	 28	 29	 30	 31
2	(40	) 41	* 42	+ 43	, 44	- 45	. 46	/ 47
3	8 56	9 57	: 58	; 59	< 60	= 61	> 62	? 63
4	H 72	I 73	J 74	K 75	L 76	M 77	N 78	O 79
5	X 88	Y 89	Z 90	[91	\\ 92	] 93	^ 94	_ 95
6	h 104	i 105	j 106	k 107	l 108	m 109	n 110	o 111
7	x 120	y 121	z 122	{ 123	¦ 124	} 125	~ 126	 127
8	ê 136	ë 137	è 138	ï 139	î 140	ì 141	Ä 142	Å 143
9	ÿ 152	Ö 153	Ü 154	ø 155	£ 156	Ø 157	Ŀ 158	ŀ 159
A	¿ 168	ã 169	Ã 170	ℓ 171	ń 172	¡ 173	³ 174	¤ 175
B	╕ 184	╣ 185	║ 186	╗ 187	╝ 188	╜ 189	╛ 190	┐ 191
C	╚ 200	╔ 201	╩ 202	╦ 203	╠ 204	═ 205	╬ 206	╧ 207
D	╪ 216	┘ 217	┌ 218	█ 219	▄ 220	▌ 221	▐ 222	▀ 223
E	Φ 232	Θ 233	Ω 234	δ 235	∞ 236	ø 237	∈ 238	∩ 239
F	° 248	▪ 249	– 250	√ 251	ⁿ 252	² 253	■ 254	 255

Printer Character Set 2 (Norway/Denmark)

Appendix F.
DOS Character Sets

	0	1	2	3	4	5	6	7
0	null 0	☺ 1	☻ 2	♥ 3	♦ 4	♣ 5	♠ 6	• 7
1	► 16	◄ 17	↕ 18	‼ 19	π 20	§ 21	▬ 22	↨ 23
2	space 32	! 33	" 34	# 35	$ 36	% 37	& 38	´ 39
3	0 48	1 49	2 50	3 51	4 52	5 53	6 54	7 55
4	@ 64	A 65	B 66	C 67	D 68	E 69	F 70	G 71
5	P 80	Q 81	R 82	S 83	T 84	U 85	V 86	W 87
6	` 96	a 97	b 98	c 99	d 100	e 101	f 102	g 103
7	p 112	q 113	r 114	s 115	t 116	u 117	v 118	w 119
8	Ç 128	ü 129	é 130	â 131	ä 132	à 133	å 134	ç 135
9	É 144	æ 145	Æ 146	ô 147	ö 148	ò 149	û 150	ù 151
A	á 160	í 161	ó 162	ú 163	ñ 164	Ñ 165	ª 166	º 167
B	░ 176	▒ 177	▓ 178	│ 179	┤ 180	╡ 181	╢ 182	╖ 183
C	└ 192	┴ 193	┬ 194	├ 195	─ 196	┼ 197	╞ 198	╟ 199
D	╨ 208	╤ 209	╥ 210	╙ 211	╘ 212	╒ 213	╓ 214	╫ 215
E	α 224	β 225	Γ 226	π 227	Σ 228	σ 229	μ 230	τ 231
F	≡ 240	± 241	≥ 242	≤ 243	⌠ 244	⌡ 245	÷ 246	≈ 247

Character Set 0

	8	9	A	B	C	D	E	F
0	◘ 8	○ 9	◙ 10	♂ 11	♀ 12	♪ 13	♫ 14	☼ 15
1	↑ 24	↓ 25	→ 26	← 27	∟ 28	↔ 29	▲ 30	▼ 31
2	(40	) 41	* 42	+ 43	, 44	- 45	. 46	/ 47
3	8 56	9 57	: 58	; 59	< 60	= 61	> 62	? 63
4	H 72	I 73	J 74	K 75	L 76	M 77	N 78	O 79
5	X 88	Y 89	Z 90	[91	\ 92	] 93	^ 94	_ 95
6	h 104	i 105	j 106	k 107	l 108	m 109	n 110	o 111
7	x 120	y 121	z 122	{ 123	¦ 124	} 125	~ 126	△ 127
8	ê 136	ë 137	è 138	ï 139	î 140	ì 141	Ä 142	Å 143
9	ÿ 152	Ö 153	Ü 154	¢ 155	£ 156	¥ 157	₧ 158	ƒ 159
A	¿ 168	⌐ 169	¬ 170	½ 171	¼ 172	¡ 173	« 174	» 175
B	╕ 184	╣ 185	║ 186	╗ 187	╝ 188	╜ 189	╛ 190	┐ 191
C	╚ 200	╔ 201	╩ 202	╦ 203	╠ 204	═ 205	╬ 206	╧ 207
D	╪ 216	┘ 217	┌ 218	█ 219	▄ 220	▌ 221	▐ 222	▀ 223
E	Φ 232	Θ 233	Ω 234	δ 235	∞ 236	ø 237	ε 238	∩ 239
F	° 248	∙ 249	· 250	√ 251	ⁿ 252	² 253	■ 254	blank 255

Character Set 0

	0	1	2	3	4	5	6	7
0	null 0	☺ 1	☻ 2	♥ 3	♦ 4	♣ 5	♠ 6	• 7
1	► 16	◄ 17	↕ 18	‼ 19	π 20	§ 21	▬ 22	↨ 23
2	space 32	! 33	" 34	# 35	$ 36	% 37	& 38	´ 39
3	0 48	1 49	2 50	3 51	4 52	5 53	6 54	7 55
4	@ 64	A 65	B 66	C 67	D 68	E 69	F 70	G 71
5	P 80	Q 81	R 82	S 83	T 84	U 85	V 86	W 87
6	` 96	a 97	b 98	c 99	d 100	e 101	f 102	g 103
7	p 112	q 113	r 114	s 115	t 116	u 117	v 118	w 119
8	Ç 128	ü 129	é 130	â 131	ä 132	à 133	å 134	ç 135
9	É 144	æ 145	Æ 146	ô 147	ö 148	ò 149	û 150	ù 151
A	á 160	í 161	ó 162	ú 163	ñ 164	Ñ 165	õ 166	Õ 167
B	░ 176	▒ 177	▓ 178	│ 179	┤ 180	╡ 181	╢ 182	╖ 183
C	└ 192	┴ 193	┬ 194	├ 195	─ 196	┼ 197	╞ 198	╟ 199
D	╨ 208	╤ 209	╥ 210	╙ 211	╘ 212	╒ 213	╓ 214	╫ 215
E	α 224	β 225	Γ 226	π 227	Σ 228	σ 229	μ 230	τ 231
F	≡ 240	± 241	≥ 242	≤ 243	⌠ 244	⌡ 245	÷ 246	≈ 247

Character Set 1

	8	9	A	B	C	D	E	F
0	◘ 8	○ 9	◙ 10	♂ 11	♀ 12	♪ 13	♫ 14	☼ 15
1	↑ 24	↓ 25	→ 26	← 27	∟ 28	↔ 29	▲ 30	▼ 31
2	(40	) 41	* 42	+ 43	, 44	- 45	. 46	/ 47
3	8 56	9 57	: 58	; 59	< 60	= 61	> 62	? 63
4	H 72	I 73	J 74	K 75	L 76	M 77	N 78	O 79
5	X 88	Y 89	Z 90	[91	\ 92	] 93	^ 94	_ 95
6	h 104	i 105	j 106	k 107	l 108	m 109	n 110	o 111
7	x 120	y 121	z 122	{ 123	¦ 124	} 125	~ 126	△ 127
8	ê 136	ë 137	è 138	ï 139	î 140	ì 141	Ä 142	Å 143
9	ÿ 152	Ö 153	Ü 154	ø 155	£ 156	Ø 157	Ŀ 158	ŀ 159
A	¿ 168	ã 169	Ã 170	ℓ 171	ń 172	¡ 173	³ 174	¤ 175
B	╕ 184	╣ 185	║ 186	╗ 187	╝ 188	╜ 189	╛ 190	┐ 191
C	╚ 200	╔ 201	╩ 202	╦ 203	╠ 204	═ 205	╬ 206	╧ 207
D	╪ 216	┘ 217	┌ 218	█ 219	▄ 220	▌ 221	▐ 222	▀ 223
E	Φ 232	Θ 233	Ω 234	δ 235	∞ 236	Ø 237	ε 238	∩ 239
F	∘ 248	● 249	• 250	√ 251	ⁿ 252	² 253	■ 254	blank 255

Character Set 1

Appendix G.
DOS Quick Reference

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Introduction

Files on the DOS Diskette

The DOS diskette supplied with the ***Ericsson Portable PC*** contains the following files:

Hidden System Files

IBMBIO.COM	DOS input and output system file
IBMDOS.COM	DOS input and output system file

System Files

ANSI.SYS	ANSI device driver
CLOCK.SYS	Device driver for the clock
COMMAND.COM	DOS command interpreter
CONFIG.SYS	System configuration file
GRAFCHAR.SYS	Character generator file for graphics modes
PRESTART.COM	System initialization command program
PRESTART.SYS	System initialization specification file

Batch Files

1.BAT	One-drive master-to-slave copying file
2.BAT	Two-drive master-to-slave copying file
AUTOEXEC.BAT	System master-to-slave diskette copying file
DELRUB.BAT	Deletes files after the copying procedure
DOSGEN.BAT	DOS system diskette creation program
DOSXFER.BAT	DOS system file copying program
ERGOS.BAT	Master-to-slave copying by using the ***Ergo-Disk***
ERGOTYPE.DAT	A text file called from autoexec.bat.
NO.RSP	A batch file response used in the copying procedure
WILLBE.BAT	The new AUTOEXEC.BAT to be put on the copy

External Command Files

ACMODEM.COM	Initiates the acoustic coupler for different communications links.
ASSIGN.COM	Disk drive reassignment program
AUTOCOPY.COM	System file copying program
BACKUP.EXE	File backup program
CDRIVE.COM	Restarts the DOS with ERGO-Disk as drive C:
CHKDSK.COM	Disk check program
COMP.EXE	File comparison program

DISKCOMP.COM	Disk comparison program
DISKCOPY.COM	Disk copying program
ERICLOCK.COM	Displays the date and time
FIND.EXE	Text scan filter
FONT.COM	Text character generator selector
FORMAT.COM	Disk formatter
GRAFTABL.COM	Character generator file loader
GRAPHICS.COM	Graphics modes hard copy program
HW.COM	Investigates the system configuration
KEYB--.COM	Country-specific keyboard support program
MODE.COM	Peripheral device mode control program
MORE.COM	Screen display filter
PRINT.COM	File print program
RECOVER.COM	File recovery program
RESTORE.EXE	File restore program
SORT.EXE	Text sort filter
SWAP.COM	***Ergo-Disk*** support function
SYS.COM	System file transfer program
TREE.COM	Directory structure display program
XLATE.COM	Character code conversion program

Utility Files

DEBUG.COM	Program debugging utility
EDLIN.COM	Line editor
EXE2BIN.EXE	Object file to memory image converter
LINK.EXE	Program linking utility
SWAPGEN.EXE	Creates batch files to support the ***Ergo-Disk***

GW BASIC Files

BASIC.COM	GWBASIC loader
BASICA.COM	GWBASIC loader
GWBASIC.EXE	GWBASIC program

Note: *The command files 1.BAT, 2.BAT, ERGOS.BAT, ERGOTYPE.DAT, NO.RSP, DELRUB.BAT and HW.COM on the DOS diskette supplied with the* ***Ericsson Portable PC*** *are used only to generate a copy of the DOS diskette from the original master. These files are not present on the copy. A new batch file AUTOEXEC.BAT is created and placed on the copy of the DOS diskette. This file is named WILLBE.BAT on the original DOS diskette.*

Command Notation

The command keyword is shown in upper case, for example,

DIR

Command parameter variables are shown in lower case, for example,

TYPE *filename*

Items optional to the command are shown in square brackets, for example,

DIR [*filename*]

Items having alternate forms are shown with the alternatives separated by a vertical bar, for example,

VERIFY [ON|OFF]

Items followed by three periods may be repeated as many times as required, for example,

ASSIGN [*x*=*y*[...]]

Command Parameters

date The date parameter consists of the day, month, and year. The order may vary according to national custom.

dirname The directory parameter specifies the name of a subdirectory consisting of 1 to 8 characters. It may be optionally followed by an extension consisting of a period (.) followed by 1 to 3 characters.

d: The drive parameter consists of a drive letter followed by a colon.

filename The filename parameter consists of 1 to 8 characters and may be optionally followed by an extension. The extension consists of a period (.) followed by 1 to 3 characters. The wildcard characters question mark (?) and asterisk (*) may be used to replace single and multiple filename characters respectively.

path The path parameter specifies a path of subdirectories and takes the form:

[\][*dirname*][*dirname*[...]][\]

Reserved Device Names

DOS reserves the following names for system devices. These device names may be used in place of filenames where data is input to, or output from the system. The colon appended to the device name is optional.

CON:

Console keyboard/display screen.

COM1: or AUX:
COM2:
COM3:
COM4:

Asynchronous communications adapter ports.

LPT1: or PRN:
LPT2:
LPT3:

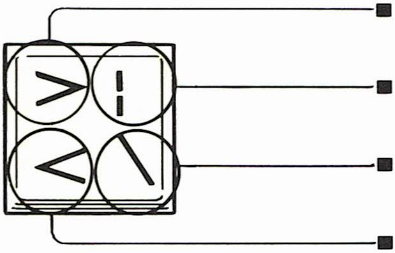
Parallel printers, used as output devices only.

NUL:

Dummy device.

Multi-Character Keys

Depending on the layout of the keyboard being used, it may include individual keys having three or four characters marked on them. The following example illustrates how to type the individual characters marked on such a key.



- Press the ⇧ (shift) key together with the key.
- Press the ⇧ key together with the **Alt** key and the key.
- Press the **Alt** key together with the key.
- Press the key.

Control Function and Editing Keys

↵ or Enter	Inputs the command line to DOS.
Ctrl ↵	Allows long commands to be extended onto the next displayed line.
Esc	Cancels the current line and moves the cursor to the next line.
←	Backspaces to delete a character from the screen.
Ctrl Break	Cancels the current operation.
Ctrl Num Lock	Suspends screen output. Display resumes when any character key is pressed.
⇧ Prt Sc	Produces a hard copy of the screen contents on the printer.
Ctrl Prt Sc	Enables and disables displayed output being sent to the printer.
Ins	Switches insert mode on and off. When insert mode is on, typing inserts characters into the buffer. When off, typing overwrites characters in the buffer.
F1 or →	Copies the current character from the input buffer to the screen.
F2 *character*	Copies all characters from the current character up to, but not including, the first occurrence of *character*, from the input buffer to the screen.
F3	Copies all characters remaining in the input buffer from the buffer to the screen, starting from the current character.
F4 *character*	Moves the character pointer to skip over all the characters in the input buffer up to *character*.
F5	Saves the currently displayed line for editing in the input buffer.
Del	Moves the character pointer to skip one character in the input buffer.

Input and Output Redirection

>[d :][path]filename

The character (>) sends the output of a program to a file or device instead of the screen. For example, DIR >PRN sends the output of the DIR command to the printer.

>>[d :][path]filename

The characters (>>) append the output of a program to a file or device. For example, DIR >>MYDIRS.LST appends the output of the DIR command to the file MYDIRS.LST.

<[d :][path]filename

The character (<) allows a program to receive input from a file or device instead of the keyboard. For example, MORE <PROG.TXT displays the contents of the file PROG.TXT one screen at a time.

>>[d :][path]filename ¦[d :][path]filename

The character (¦) allows the screen output of one program to be used as the keyboard input of another program. For example, DIR ¦SORT sends the output of the DIR command to the SORT program to display a sorted directory listing on the screen.

Commands

ASSIGN

(External)

ASSIGN [*x* = *y* [...]]

Routes requests from drive *x* to drive *y*, etc.

BREAK

(Internal)

BREAK [ON|OFF]

Specifies conditions for keyboard **Ctrl**-**Break** checking.

CHDIR or CD

(Internal)

CHDIR [[*d*:]*path*]
or
CD [[*d*:]*path*]

Changes the current directory.

CHKDSK

(External)

CHKDSK [*d*:][*filename*][/F][/V]

Checks a disk or a file and reports status.

/V reports the progress of disk or file verification.

/F corrects the disk errors found.

CLS

(Internal)

Clears the screen.

COMP

(External)

```
COMP  [/#][/A][/B][/W][/C][d:][path]filename
          [d:][path]filename
```

Compares files. Defaults to /B operation.

/# specifies the number of lines to match before ASCII files are resynchronized after a mismatch. The character (#) is a digit from 0 through 9. The default value is 3.

/A forces an ASCII line-by-line comparison.

/B forces a binary byte-by-byte comparison.

/W substitutes a single space for ASCII tabs and multiple spaces.

/C treats upper and lower case ASCII characters as synonomous.

COPY

(Internal)

```
COPY  [/A|/B][d:][path]filename
          [d:[path]][/A|/B][/V]
```

Copies files, keeping the same name.

```
COPY  [/A|/B][d:][path]oldfilename[/A|/B]
          [d:][path]newfilename[/A|/B][/V]
```

Copies files and gives the copy a different name.

```
COPY  [/A|/B][d:][path]filename[/A|/B]
          [+[d:][path]filename[/A|/B][...]]
              [d:][path][newfilename][/A|/B][/V]
```

Concatenates files while copying.

The *filename* parameters define the source files and the *newfilename* is the concatenated copy. If *newfilename* is omitted, files are copied and concatenated using only the first source filename.

/V verifies the copying process.

/A indicates that a source file contains ASCII text.

/B indicates that a source file contains binary data.

The switches /A and /B apply to the preceding filename and all following files until a further /A or /B switch occurs.

CTTY

(Internal)

CTTY *devicename*

Switches control between standard and auxiliary consoles.

DATE

(Internal)

DATE [*date*]

Enters or displays date.

DEL

(Internal)

DEL [*d*:][*path*][*filename*]

Deletes files. An alternative keyword is ERASE.

DIR

(Internal)

DIR [*d*:][*path*][*filename*][/P][/W]

Lists all filenames in a directory.

/P displays files one screen at a time.

/W displays filenames only.

DISKCOMP

(External)

DISKCOMP [*d*:][*d*:][/1][/8]

Compares diskettes.

/1 allows only the first side of the two diskettes to be compared.

/8 allows only the first 8 sectors per track to be compared.

DISKCOPY

(External)

DISKCOPY [*d*:][*d*:]

Copies diskettes.

DOSGEN

(External)

DOSGEN

Formats a diskette and also copies PRESTART, DOS system, and configuration files to it.

DOSXFER

(External)

DOSXFER

Copies PRESTART, DOS system, and configuration files to diskette.

ERASE

(Internal)

ERASE [*d*:][*path*][*filename*]

Deletes files. An alternative keyword is DEL.

EXIT

(Internal)

Exits the current command interpreter.

FIND

(External)

FIND [/V][/C][/N]*string*[*filename*[...]]

Searches files for a string of text.

/V displays lines not containing the string.

/N displays lines containing the string with line number.

/C displays the number of occurrences of the string in each file.

FORMAT

(External)

FORMAT [*d*:][/S][/1][/8][/V]

Formats disks.

/1 formats a diskette for single-sided use.

/8 formats a diskette for use at 8 sectors per track. Defaults to 9 sectors per track. Cannot be used with /V.

/S copies DOS system files IO.SYS, MSDOS.SYS, and COMMAND.COM to the disk.

/V allows the entry of a volume label. Cannot be used with /8.

GRAFTABL

(External)

GRAFTABL [[*d*:][*path*]*filename*]

Loads characters for graphics modes.

GRAPHICS

(External)

Loads support program for hard copy of graphics.

KEYB--

(External)

Loads support program for language keyboards. The two hyphen characters (--) are replaced by two letters indicating the national version.

MKDIR or MD

(Internal)

MKDIR [*d*:]*path*
or
MD [*d*:]*path*

Creates a subdirectory.

MODE

(External)

MODE LPT#:[*charactersperline*][,[*linespacing*][,P]]

Sets the operational mode of the printer.

MODE CO40|CO80

Sets the operational mode of the display adapter.

MODE COM#:*baud*[,*parity*[,*databits*[,*stopbits*[,P]]]]

Sets the operational mode of the asynchronous communications adapter.

MODE LPT#:=COM#:

Redirects output for a parallel printer to an asynchronous communications adapter.

In all MODE options, the parameter (#) specifies the device number, P specifies continuous retries on timeout.

MORE

(External)

Enables the display of one screen of data at a time.

PATH

(Internal)

PATH [[*d* :]*path*][;[*d* :]*path* [...]]

Specifies directory search paths.

PRINT

(External)

PRINT [[*d* :][*filename*][/T][/C][/P][...]]

Controls the print queue. Used without parameters, PRINT displays the print queue contents.

/P appends the preceding file and following files up to the occurrence of a /C.

/C removes the preceding file and following files up to the occurrence of a /P.

/T removes all files from the print queue.

PROMPT

(Internal)

PROMPT [*prompttext*]

Defines a new prompt or restores the DOS prompt. If *prompttext* is omitted, the original DOS system prompt is restored. The parameter *prompttext* may contain meta-strings of the form $c where c represents one of the following parameters:

$	the ASCII character $
t	the current time
d	the current date

p	the current directory of the default drive
v	the current DOS version number
n	the default drive
g	the ASCII character >
l	the ASCII character <
b	the ASCII character |
q	the ASCII character =
h	a backspace and deletion of the previous character
e	the ASCII escape character ESC
_	the ASCII carriage return line feed sequence

RD or RMDIR

(Internal)

RMDIR [*d*:]*path*
or
RD [*d*:]*path*

Removes subdirectories.

RENAME

(Internal)

REN[AME] [*d*:][*path*]*oldfilename* *newfilename*

Renames files.

SET

(Internal)

SET [*name*=[*parameter*]]

Inserts or displays environment strings.

SORT

(External)

SORT [/R][/+ *n*]

Sorts ASCII data.

/R reverses the sort operation so that Z precedes A.

/+ *n* specifies the start column for sorting.

SWAP

External

SWAP [D][P][OFF]

Provides support for using the ***Ergo-Disk***.

D Transfers data to the ***Ergo-Disk***.

P Transfers a program to the ***Ergo-Disk***.

Off Ends the swapping session by checking changed files and copying them to the diskette.

SWAPGEN

SWAPGEN

filename

Allows you to initialize a batch file which will contain SWAP commands.

SYS

(External)

SYS *d*:

Copies DOS system files IO.SYS and MSDOS.SYS to the specified drive.

TIME

(Internal)

TIME [*hh* : *mm* : *ss*]

Enters or displays the time.

TREE

(External)

TREE [*d*:][/F]

Displays the directory structure.

/F displays the filenames contained in each subdirectory.

TYPE

(Internal)

TYPE [*d*:][*path*]*filename*

Displays file contents.

VER

(Internal)

Displays the current MS-DOS version number.

VERIFY

(Internal)

VERIFY [ON|OFF]

Specifies conditions for writing data to disk.

VOL

(Internal)

VOL [*d*:]

Displays the volume identification label.

XLATE

(External)

XLATE *devicename* [*d*:][*path*]*filename*

Translates character codes to or from a device.

Batch Commands

ECHO

ECHO [ON | OFF | *messagetext*]

Controls screen display and outputs messages.

FOR

FOR %% *variable* IN (*set*) DO *command*

Enables repeated execution of commands. The parameter *variable* is a single arbitrary alphabetic character. The parameter *set* is one expression, or a number of expressions delimited by a space.

GOTO

GOTO *label*

Transfers control to the command line following a label. The parameter *label* is a string where the first 8 characters are significant. A label in a batch file consists of a colon followed by the label name, for example, :START.

IF

IF [NOT] *condition command*

Enables conditional execution of commands. The parameter *condition* is one of the following: ERRORLEVEL *number*, *string*1==*string*2, or EXIST [*d*:]*filename* .

PAUSE

PAUSE [*messagetext*]

Suspends batch processing and displays a user prompt.

REM

REM [*messagetext*]

Displays a character string from within a batch file.

SHIFT

Allows a batch file to accept more than ten parameters.

Utilities

EDLIN

The EDLIN utility is started from the DOS prompt as follows:

EDLIN [*d*:][*path*]*filename*[/B]

/B ignores embedded EOF characters when inputting the file.

Command Parameters

line	Line number
n	Number of lines
string	Text character string
?	Prompt request character

EDLIN Commands

Append Lines

[*n*]A

Adds lines from disk to the file currently being edited.

Copy Lines

[*line*],[*line*],*line*[,*count*]C

Copies the range specified by the first two line numbers to the location ahead of the third line number, and repeats the copy operation *count* times.

Delete Lines

[*line*][,*line*]D

Deletes the range of lines specified.

Edit Lines

[*line*]

Specifies the number of a line for editing.

End Edit

E

Exits EDLIN saving the edited file.

Insert Lines

[*line*]I

Inserts text lines into the file being edited.

List Lines

[*line*][, *line*]L

Displays the range of lines specified without changing the current line.

Move Lines

[*line*],[*line*], *line* M

Moves the range of lines specified by the first two line numbers to the location ahead of the third line number.

Page

[*line*][, *line*]P

Displays the range of lines specified, and changes the current line to the last line displayed.

Quit Edit

Q

Exits EDLIN without saving the current file.

Replace Text

[*line*][, *line*][?]R[*string*][**F6** *string*]

Replaces the first string of text with the second string in the range of lines specified.

Search Text

[*line*][, *line*][?]S[*string*]

Locates a string in the range of lines specified.

Transfer Lines

[*line*]T[*d* :]*filename*

Inputs the file contents ahead of the specified line.

Write Lines

*n*W

Writes lines from the file currently being edited to disk.

DEBUG

The DEBUG utility is started from the DOS prompt as follows:

DEBUG [[d:][path][filename][arglist]]

Command Parameters

address	Memory address
drive	Drive designator

A single digit specifying the drive: 0 for drive A, 1 for drive B, etc. Used by the load and write commands to define a disk drive.

list	List specifier

A list of hexadecimal bytes and/or ASCII strings.

range	Address range specifier
string	ASCII character string

A series of ASCII characters enclosed in single quotes (' ') or double quotes (" ").

Commands

Assemble

A[*address*]

Inputs assembler mnemonics directly into memory.

Compare

C *range address*

Compares the contents of a *range* of memory to that of an area of the same size starting at *address*.

Dump

D[*address* | *range*]

Displays the contents of the memory locations specified.

Enter

E*address* [*list*]

Enters byte values starting at a specified location.

Fill

F*range list*

Fills byte values in the specified range.

Go

G[= *address*] [*address* [...]]

Executes the program between the specified addresses.

Hexarithmetic

H*value value*

Performs hexadecimal addition and subtraction of two values.

Input

I*portaddress*

Inputs a byte value from the specified port.

Load

L[*address* [*drive sector numberofsectors*]]

Loads sectors, or a pre-defined file, from disk into memory.

Move

Mrange address

Moves the contents of the range specified to the locations starting at the defined address.

Name

N[*d* :]*filename* [[*d* :]*filename*]

Names a file prior to load and write commands.

Output

Oportaddress byte

Outputs a byte to the specified port.

Quit

Q

Exits DEBUG.

Register

R[*register*]

Displays and optionally changes the register contents.

Search

Srange list

Searches a range of memory for the listed bytes.

Trace

T[= *address*] [*value*]

Executes the number of instructions defined by *value* starting at the specified address. Displays the register contents after each instruction.

Unassemble

U[*address* | *range*]

Disassembles the contents of memory and displays location addresses, instruction mnemonics, and operand values in source statement format.

Write

W[*address* [*drive sector numberofsectors*]]

Writes sectors, or a pre-defined file, from memory to disk.

LINK

The LINK utility is started from the DOS prompt as follows:

LINK

Refer to the ***DOS Programmer's Manual*** for further details.

EXE2BIN

EXE2BIN [*d* :][*path*]*filename* [[*d* :][*path*][*filename*]]

Converts .EXE files to .COM file format.

The first filename is the input .EXE file, and the second filename is the converted file. The input file extension defaults to .EXE, and the converted file extension defaults to .BIN. If the second filename is omitted, the input filename is used.

Refer to the ***DOS Programmer's Manual*** for further details.

Configuration

In many cases, there are installation-specific settings for DOS that must be configured at system startup. For example, this must be done for an optional device driver, such as a real-time clock or a RAM disk.

There are two configuration files on the ***Ericsson DOS Diskette***, PRESTART.SYS and CONFIG.SYS, which configure the system with a minimum of effort.

The PRESTART.SYS File

When DOS is started, it searches for a program called PRESTART.COM on the system disk. If found, this program executes the *external* commands in the PRESTART.SYS file. If PRESTART.COM and PRESTART.SYS are not present on the system disk, execution continues with a search for the CONFIG.SYS file.

The PRESTART.SYS file on the ***Ericsson DOS Diskette*** contains the following commands:

```
KEYB--
```

This command specifies the national keyboard layout used. The hyphen characters (--) represent the letter code indicating the country.

```
GRAFTABL GRAFCHAR.SYS
```

The GRAFTABL command loads the GRAFCHAR.SYS file which contains a complete character generator with characters 128–255 in an 8 × 8 box and characters 0–255 in an 8 x 16 box.

If the GRAFCHAR.SYS file is not specified in the command, an internal character generator with characters 128–255 in an 8 × 8 box is used.

```
GRAPHICS
```

This command loads the program supporting graphics for printing from screen.

The CONFIG.SYS File

The CONFIG.SYS file on the ***Ericsson DOS Diskette*** contains the following commands:

```
COUNTRY=nn
DEVICE = CLOCK.SYS
```

This command dictates the form that DOS uses for receiving and presenting certain country-dependent information. For example, the date can be expressed in various ways, and some countries use a comma (,) instead of a period as the decimal sign. The parameter *nn* is the number code of the desired country. CLOCK.SYS is a device driver for the battery backed-up calender/clock.

Other commands that can be included in the CONFIG.SYS file are:

```
BREAK=ON¦OFF
```

Specifies conditions for keyboard **Ctrl-Break** checking. OFF is default.

```
BUFFERS=nn
```

Specifies the number of disk buffers. The parameter *nn* is a number from 1 through 99. Its default value is 2. For a PC with a hard disk, a minimum of 3 buffers is recommended.

```
DEVICE=[ d :][ path ]filename
```

Specifies the name of an optional device driver.

```
FILES=nn
```

Specifies the number of files that can be open simultaneously. The parameter *nn* is a number from 1 through 99. Its default value is 8.

```
SHELL=[ d :][ path ]filename
```

Specifies a shell (top-level) command interpreter to be loaded instead of COMMAND.COM.

Automatic Program Execution

A batch file named AUTOEXEC.BAT can be created to contain the names of any commands that are to run automatically each time DOS is started. Program names can also be included in this file, provided that the programs are stored in files with the extension .COM., .EXE. or .BAT.

When DOS is started, the command interpreter COMMAND.COM searches for the AUTOEXEC.BAT file on the system disk. If found, the commands and programs specified in it are immediately executed. Time and date prompts are bypassed unless the TIME and DATE commands are included in this file.

If, for example, an AUTOEXEC.BAT file is created that contains:

```
DATE
TIME
GWBASIC SAMPLE.BAS
```

DOS displays the date and time prompts, loads BASIC, and executes the BASIC program SAMPLE.

Appendix H. Document List

If you want more information than is given in The ***User's Manual***, you could turn to any of the following documents:

- DOS Manual and DOS Guide
- DOS Programmer's Manual
- GW BASIC Manual and GW BASIC Guide
- Technical Reference Manual

Ask your local dealer for these documents.

DOS Manual and Guide

The ***DOS /Manual*** is a reference document for the disk operating system in your PC; the ***DOS Guide*** is a quick reference to the contents of the manual.

DOS Programmer's Manual

The ***DOS Programmer's Manual*** contains information for programmers writing applications programs for the PC.

GW BASIC Manual and Guide

The ***GW BASIC Manual*** is a reference document for BASIC programmers for use when developing and running programs in GW BASIC. The ***GW BASIC Guide*** is a quick reference guide to the ccontents of the manual.

Technical Reference Manual

The ***Technical Reference Manual*** describes the hardware in the ***Ericsson Portable PC***, and the interfaces to other units.

Appendix I. Technical Data

System Unit

Standard features
Intel 8088 CPU
256 kbyte RAM, expandable to 512 kbyte
16 kbyte ROM
1×360 kbyte 5¼" diskette drive
1 internal bus port
1 port for external 5¼" diskette drive
1 serial port (RS 232 C)
1 printer port (parallel)
Real-time clock and calendar

Operating system/language
MS-DOS 2.11
GW-BASIC

Options
256 kbyte expansion RAM
512 kbyte electronic disk
External 5¼" diskette drive
Built-in acoustic coupler (CCITT and Bell standards)
Built-in printer for thermo- and plain paper Paper width max 221 mm, printer speed 40 cps
Expansion unit

Physical characteristics including monitor and keyboard
Height 115 mm (4.6 inches)
Width 390 mm (15.6 inches)
Depth 310 mm (12.4 inches)
Weight 7.6 kg (16.7 pounds)

Compatibility
Operationally compatible with PC-DOS 2.10 operating system

Keyboard

Features
84 keys
10 function keys
14-key numeric keypad
N-key rollover
Detachable

Physical characteristics
Height 25 mm (1 inch)
Width 390 mm (15.6 inches)
Depth 170 mm (6.8 inches)

Monitor

Features
Monochrome plasma display
Neon orange non-glare screen 640×400, 320×400 very high resolution graphics
640×200, 320×200 high resolution graphics
Dot pitch 0.3×0.36
Viewing area 192×144 mm (7.7×5.8 inches)
Aspect ratio 4:3
25 lines by 80 columns
8×16 character box
Intensity control

Environmental characteristics

Operating temperature 10°C–35°C (50°F–95°F)
Relative humidity 20 %–85 % (non-condensing)
International standards
VDE 0871-B, FCC 15J-B, IEC 380, UL 114

Power requirements

Input voltage 110–120 V AC, 220–240 V AC 50/60 Hz

Fuses

- US standard ST4-5A miniature fuse
- European standard BET-5A miniature fuse

Glossary Index

Glossary

Application program
A computer program designed to perform a specific type of work. There are application programs that do word processing, payroll, and even flight simulation.

Board
A device containing electronic components and the electronic circuits needed to connect them. It also contains connectors used to connect the board to the computer. Examples of boards are the video adapter board and the memory expansion board.

Byte
A byte is used to represent a character (letter, digit, etc.) internally in the computer. One kilobyte (kB) = 1,024 bytes and 1 megabyte (MB) = 1,024 kB.

Character
A letter (A-Z), a digit (0-9) or a symbol (%, $, etc.) used to represent data.

Command
An instruction given to the computer that causes it to perform an operation.

Copy
Reproducing data from one information storage medium to another, or from one part of an information storage medium to another part. See backup.

Cursor
The cursor defines the position on the screen into which the next character is written. The cursor can be a box or a line, and is usually blinking.

Data
Facts, numbers, letters, and symbols stored in the PC. Data can be used, created, or processed by an application program.

Default drive
The disk drive that the PC works with if you don't specify a drive. The default drive is indicated by the letter in the system (DOS) prompt.

Directory
Every diskette has a directory. It contains the filenames, the sizes of the files, and dates and times that they were last updated.

Disk Operating System (DOS)
Computer programs that control the overall operation of the computer.

Disk drive
A device used to read information from, or store information on a diskette.

Diskette
A flexible, flat, circular plate permanently housed in a plastic jacket. The plate has a magnetic surface to store programs and data.

DOS
See Disk Operating System.

Drive name
Every diskette drive and hard disk drive has a name. It consists of one letter (A, B, or C) followed by a colon(:).

Ergo-Disk
See RAM disk.

Error message
Message displayed on the screen by the computer when a fault occurs. The error message explains the problem and, in many cases, tells you what to do next.

File
A collection of information stored on a disk.

Filename
A filename consists of up to eight characters and may optionally include an extension. The extension consists of a period (.) and up to three characters.

Formatting
New diskettes must be formatted before they can be used. Formatting is carried out by means of the DOS command FORMAT.

Keyboard

You use the keyboard to enter data, text, and commands into the PC. The keyboard contains different keys depending on the national version being used.

Memory

PC memory takes two forms:

- A storage area in the computer where instructions and data are stored when the computer runs a program.
- A diskette or hard disk on which information is stored and from which it later can be read into the computer.

Menu

A list of optional facilities displayed on the screen from which the user can choose the desired functions to be performed.

Monitor

A device that is used to present text and graphics on a screen. This might be messages from the computer or text that you enter at the keyboard.

Option

A unit that allows expansion of the computer, such as a memory expansion board. See board.

Power-on test

Procedure performed by the computer when it is turned on. During this procedure, the computer checks its basic components. If the computer is not functioning properly an error message is displayed.

Printer

An optional unit that allows you to make paper copies of your work on the PC.

Program

A set of instructions composed for the computer to solve a problem.

Prompt (system prompt)

A message (A>, > or C>) displayed on the screen which tells you that the PC is ready to accept an input from you.

RAM disk

An electronic memory expansion board located inside the PC (and, therefore, physically inaccessable). It is used to simulate an extra diskette drive. The software support that ***Ericsson*** gives its RAM disk turns this board into an ***Ergo-Disk***.

Self-test
A procedure whereby a unit checks its own operation.

Source diskette
A source diskette is the diskette in a copying operation which is to be copied, or which contains the files to be copied. See target diskette.

System board
The main part of the system unit. It contains the CPU (Central Processing Unit), memory, and the interface circuitry for the keyboard, printer, etc. See system unit.

System unit
The unit of your PC which contains the system board, disk drives, power supply, and option boards.

Target diskette
The target diskette is the diskette in a copying operation onto which the files or the entire contents of another diskette are copied.

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